STEEL CITY™

User Manual

Read and understand this manual before using machine.

20” INDUSTRIAL PLANER

C US

Model No.
40280

STEEL CITY TOOL WORKS

VER. 01.08

Manual Part No. SC75001

THANK YOU for purchasing your new Steel City Planer. This planer has been designed, tested, and inspected with you, the customer, in mind. When properly used and maintained, your planer will provide you with years of trouble free service, which is why it is backed by one of the longest machinery warranties in the business.

This planer is just one of many products in the Steel City's family of woodworking machinery and is proof of our commitment to total customer satisfaction.

At Steel City we continue to strive for excellence each and every day and value the opinion of you, our customer. For comments about your planer or Steel City Tool Works, please visit our web site at **www.steelcitytoolworks.com**

TABLE OF CONTENTS

INTRODUCTION

SECTION 1 Warranty 4

SECTION 2 Product Specifications 7

SECTION 3 Accessories and Attachments 7

SECTION 4 Definition of Terms.....7

SECTION 5 Feature Identification 8

SECTION 6 General Safety.....9

SECTION 7 Product Safety 11

SECTION 8 Electrical Requirements.....12

SECTION 9 Grounding Instructions 13

SECTION 10 Unpacking & Inventory.....14

SECTION 11 Assembly 16

SECTION 12 Adjustments 19

SECTION 13 Operations 27

SECTION 14 Maintenance 29

SECTION 15 Troubleshooting Guide.....30

SECTION 16 Parts List.....33

INTRODUCTION

This user manual is intended for use by anyone working with this machine. It should be kept available for immediate reference so that all operations can be performed with maximum efficiency and safety. Do not attempt to perform maintenance or operate this machine until you have read and understand the information contained in this manual.

This Planer is designed to process wood only. Any other use is forbidden. This machine is not to be modified for any reasons.

The drawings, illustrations, photographs, and specifications in this user manual represent your machine at time of print. However, changes may be made to your machine or this manual at any time with no obligation to Steel City Tool Works.

WARRANTY

2 YEAR LIMITED WARRANTY

Steel City Tool Works, LLC (SCTW) warrants this SCTW machinery to be free of defects in workmanship and materials for a period of 2 years from the date of the original retail purchase by the original owner for domestic use. Granite components are warranted for 2 years based on normal use and is void if non SCTW accessories are used that cause the break or chip. Customer must advise SCTW within 30 days for any damage or defect found upon receipt of the product to qualify for the warranty on granite.

The warranty does not cover any product used for professional or commercial production purpose nor for industrial or educational applications. Such cases are covered by our 1 year Limited Warranty with the Conditions and Exceptions listed below.

Conditions and exception:

Warranty applies to the original buyer only and may not be transferred. Original proof of purchase is required.

Warranty does not include failures, breakage or defects deemed after inspection by an Authorized Service Center, (ASC) or agent of, have been directly or indirectly caused by or resulting from improper use, lack of or improper maintenance, misuse or abuse, negligence, accidents, damage in handling or transport, or normal wear and tear of any part or component.

Additionally, warranty is void if repairs or alterations are made to the machine by an unauthorized service center without the direct consent of SCTW

Consumables such as blades, knives, bits and sandpaper are not covered.
Wear items such as drive belt, bearings, switch, are covered for 1 year.

To file a claim of warranty or to find a service center, call toll free 877-724-8665 or email customercare@steelcitytoolworks.net and you must be able to present the original or photo copy of the sales receipt including the serial number from the machine and/or carton.

SCTW will inspect, repair or replace, at its expense and its option, any part that has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to a designated ASC and provides SCTW with a reasonable opportunity to verify the alleged defect by inspection. SCTW will return the product or replacement at our expense unless it is determined by us that there is no defect or that the defect resulted from causes not within the scope of our *warranty in which case we will, at your direction, dispose of or return the product.* In the event you choose to have the product returned, you will be responsible for the handling and shipping costs of the return.

SCTW furnishes the above warranties in lieu of all other warranties, express or implied. SCTW shall not be liable for any special, indirect, incidental, punitive or consequential damages, including without limitation loss of profits arising from or related to the warranty, the breach of any agreement or warranty, or the operation or use of its machinery, including without limitation damages arising from damage to fixtures, tools, equipment, parts or materials, direct or indirect loss caused by and other part, loss of revenue or profits, financing or interest charges, and claims by and third person, whether or not notice of such possible damages has been given to SCTW. Damages or any kind for any delay by or failure of SCTW to perform its obligations under this agreement or claims made a subject of a legal proceeding against SCTW more than one (1) year after such cause of action first arose.

The validity, construction and performance of this Warranty and any sale of machinery by SCTW shall be governed by the law of the Commonwealth of Pennsylvania, without regard to conflicts of law's provisions of any jurisdiction. Any action related in any way to any alleged or actual offer, acceptance or sale by SCTW or any claim related to the performance of and agreement including without limitation this Warranty, shall take place in the federal or state courts in Allegheny County, Pennsylvania.

Warranty registration card must be submitted to SCTW for purpose of proof within 90 days of purchase with a copy of the sales receipt. Failure to do so will, revert the 2 year warranty to 1 year as in the terms stated above. This registration is also needed to facilitate contact in case of a safety recall.

This warranty gives you specific legal rights and you may have other rights which vary in certain States or Provinces.

Note to user
This instruction manual is meant to serve as a guide only. Specification and references are subject to change without prior notice. Check the website www.steelcitytoolworks.com for updated manuals with reference to the VER# located on the front page.

LIMITED WARRANTY – ACCU-SHOP line of bench top tools

Steel City Tool Works, LLC (SCTW) warrants this SCTW ACCU-SHOP machinery to be free of defects in workmanship and materials for a period of 2 years from the date of the original retail purchase by the original owner for domestic use.
Consumables such as blades, knives, bits and sandpaper are not covered.
Wear items such as drive belt, bearings, switch, are covered for 1 year.

The warranty does not cover any product used for professional or commercial production purpose nor for industrial or educational applications. Such cases are covered by our 30 days Limited Warranty with the Conditions and Exceptions listed previously.

WARRANTY CARD

Name _____
Street _____
Apt. No. _____
City _____ State _____ Zip _____
Phone Number _____
E-Mail _____

Product Description: _____
Model No.: _____
Serial No. _____

The following information is given on a voluntary basis and is strictly confidential.

1. Where did you purchase your STEEL CITY machine?
   Store: _____
   City: _____

2. How did you first learn of Steel City Tool Works?
   ___ Advertisement ___ Mail Order Catalog
   ___ Web Site ___ Friend
   ___ Local Store Other _____

3. Which of the following magazines do you subscribe to?
   ___ American Woodworker ___ American How-To
   ___ Cabinetmaker ___ Family Handyman
   ___ Fine Homebuilding ___ Fine Woodworking
   ___ Journal of Light Construction ___ Old House Journal
   ___ Popular Mechanics ___ Popular Science
   ___ Popular Woodworking ___ Today's Homeowner
   ___ WOOD ___ Woodcraft
   ___ WOODEN Boat ___ Woodshop News
   ___ Woodsmith ___ Woodwork
   ___ Woodworker ___ Woodworker's Journal
   ___ Workbench Other _____

4. Which of the following woodworking / remodeling shows do you watch?
   ___ Backyard America ___ The American Woodworker
   ___ Home Time ___ The New Yankee Workshop
   ___ This Old House ___ Woodwright's Shop
   Other _____

5. What is your annual household income?
   ___ $20,000 to $29,999 ___ $30,000 to $39,999
   ___ $40,000 to $49,999 ___ $50,000 to $59,999
   ___ $60,000 to $69,999 ___ 70,000 to $79,999
   ___ $80,000 to $89,999 ___ $90,000 +

6. What is your age group?
   ___ 20 to 29 years ___ 30 to 39 years
   ___ 40 to 49 years ___ 50 to 59 years
   ___ 60 to 69 years ___ 70 + years

7. How long have you been a woodworker?
   ___ 0 to 2 years ___ 2 to 8 years
   ___ 8 to 20 years ___ over 20 years

8. How would you rank your woodworking skills?
   ___ Simple ___ Intermediate
   ___ Advance ___ Master Craftsman

9. How many Steel City machines do you own? _____

10. What stationary woodworking tools do you own?
    Check all that apply.
    ___ Air Compressor ___ Band Saw
    ___ Drill Press ___ Drum Sander
    ___ Dust Collection ___ Horizontal Boring Machine
    ___ Jointer ___ Lathe
    ___ Mortiser ___ Panel Saw
    ___ Planer ___ Power Feeder
    ___ Radial Arm Saw ___ Shaper
    ___ Spindle Sander ___ Table Saw
    ___ Vacuum Veneer Press ___ Wide Belt Sander
    Other _____

11. Which benchtop tools do you own? *Check all that apply.*
    ___ Belt Sander ___ Belt / Disc Sander
    ___ Drill Press ___ Band Saw
    ___ Grinder ___ Mini Jointer
    ___ Mini Lathe ___ Scroll Saw
    ___ Spindle / Belt Sander Other _____

12. Which portable / hand held power tools do you own?
    Check all that apply.
    ___ Belt Sander ___ Biscuit Jointer
    ___ Dust Collector ___ Circular Saw
    ___ Detail Sander ___ Drill / Driver
    ___ Miter Saw ___ Orbital Sander
    ___ Palm Sander ___ Portable Thickness Planer
    ___ Saber Saw ___ Reciprocating Saw
    ___ Router Other _____

13. What machines / accessories would you like to see added to the STEEL CITY line?
    _____
    _____

14. What new accessories would you like to see added?
    _____
    _____

15. Do you think your purchase represents good value?
    ___Yes ___ No

16. Would you recommend STEEL CITY products to a friend?
    ___ Yes ___ No

17. Comments:
    _____
    _____
    _____
    _____
    _____

✂ CUT HERE

FOLD ON DOTTED LINE

PLACE
STAMP
HERE

SteelCityToolWorks

#4 Northpoint Court
Bolingbrook, IL 60440

FOLD ON DOTTED LINE

PRODUCT SPECIFICATIONS

Capacities

Maximum stock width	20-in
Maximum stock thickness	8-in
Maximum depth-of-cut	1/8-in
Minimum length of stock	7-in
Feed Rate	16-30 FPM

Cutterhead

Speed	5000 RPM
Number of Knives	4
Diameter	3-3/16”
Cuts Per Minute	5000

Motor Specifications

Type	Induction
Horsepower	5HP
Amps	22
Voltage	240V
Phase	single
Hertz	60
RPM’s	3450

Product Dimensions

Footprint	32-19/32 x 23-45/64”
Length	55-5/8”
Width	38-5/16”
Height	42”
Weight	739 Lbs.

Shipping Dimensions

Carton Type	Steel Frame
Length	27-1/4”
Width	37-1/2”
Height	40-1/2”
Gross Weight	787 Lbs.

ACCESSORIES AND ATTACHMENTS

There are a variety of accessories available for your Steel City Product. For more information on any accessories associated with this and other machines, please contact your nearest Steel City distributor, or visit our website at : **www.steelcitytoolworks.com.**

DEFINITION OF TERMS

Workpiece - The wood or lumber that you are working on.

Planing - Refers to the sizing of the lumber to a desired thickness, while creating a level surface.

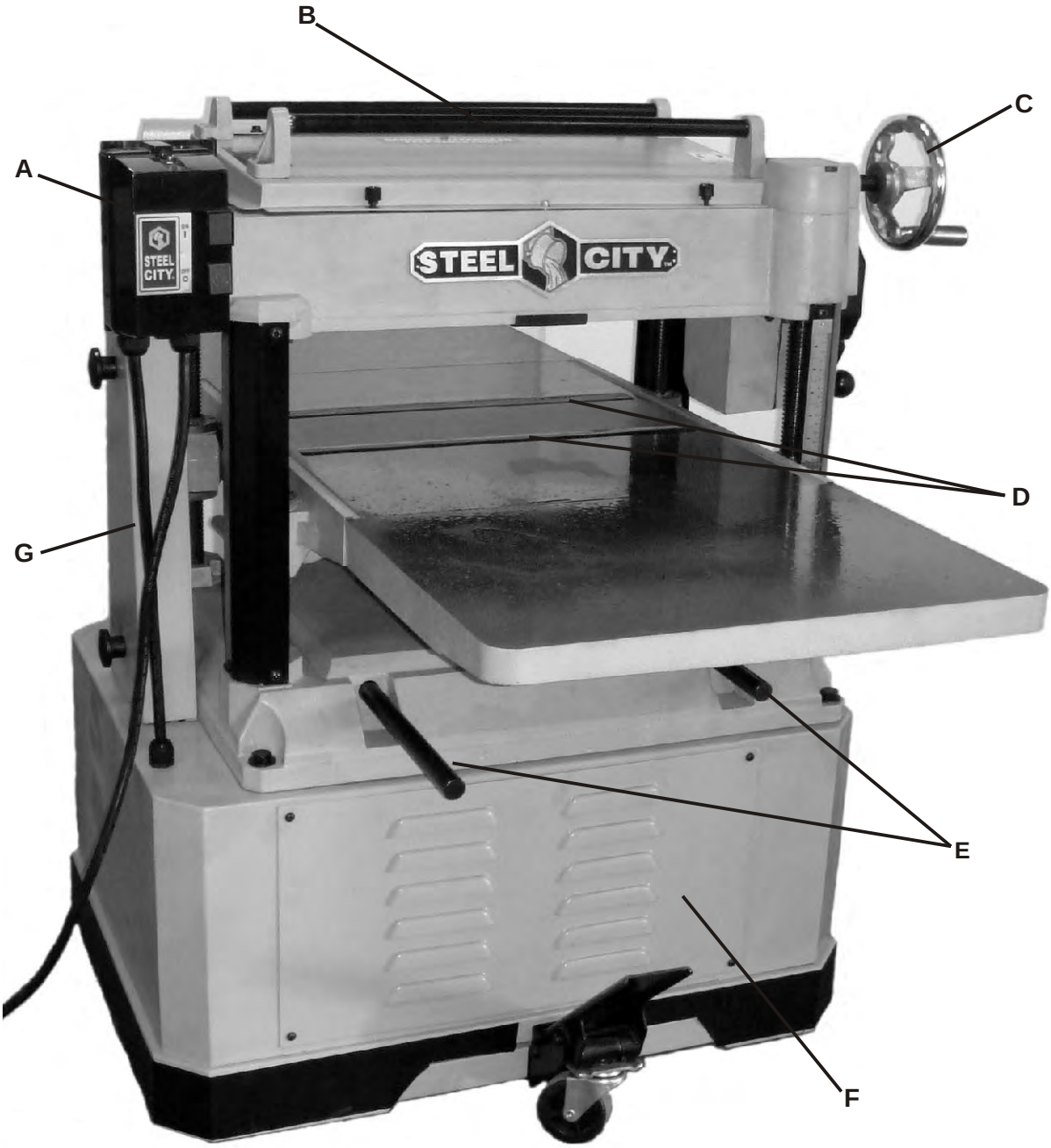
Snipe - Gouging that occurs at the end of a board.

Chatter Marks - An uneven “ washboard” type of cut caused by incorrect chipbreaker settings.

Chip Marks - Occurs when knives catch the chips and drag them across the lumber being planed, caused by exhaust blockage or improper chip deflector settings.

Tear Out - Depth gouging caused by improper chip-breaker settings.

FEATURE IDENTIFICATION



A) Switch
B) Return Rollers
C) Table Raise/Lower Handwheel
D) Bed Rollers
E) Lifting Handles
F) Access Panel
G) Belt Guard

GENERAL SAFETY

⚠ WARNING

TO AVOID serious injury and damage to the machine, read and follow all Safety and Operating Instructions before assembling and operating this machine.

This manual is not totally comprehensive. It does not and can not convey every possible safety and operational problem which may arise while using this machine. The manual will cover many of the basic and specific safety procedures needed in an industrial environment.

All federal and state laws and any regulations having jurisdiction covering the safety requirements for use of this machine take precedence over the statements in this manual. Users of this machine must adhere to all such regulations.

Below is a list of symbols that are used to attract your attention to possible dangerous conditions.

⚠

This is the international safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

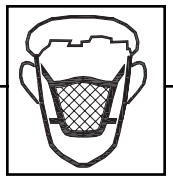
CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the machine.

⚠ WARNING



Exposure to the dust created by power sanding, sawing, grinding, drilling and other construction activities may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. The dust may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

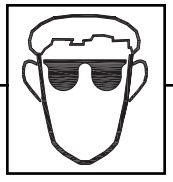
Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Always operate tool in well ventilated area and provide for proper dust removal. Use a dust collection system along with an air filtration system whenever possible. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

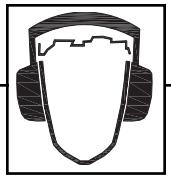
1. To avoid serious injury and damage to the machine, read the entire User Manual before assembly and operation of this machine.

⚠ WARNING



2. **ALWAYS** wear eye protection. Any machine can throw debris into the eyes during operations, which could cause severe and permanent eye damage. Everyday eyeglasses are **NOT** safety glasses. **ALWAYS** wear Safety Goggles (that comply with ANSI standard Z87.1) when operating power tools.

⚠ WARNING



3. **ALWAYS** wear hearing protection. Plain cotton is not an acceptable protective device. Hearing equipment should comply with ANSI S3.19 Standards.

⚠ WARNING

4. **ALWAYS** wear a NIOSH/OSHA approved dust mask to prevent inhaling dangerous dust or airborne particles.

5. **ALWAYS** keep the work area clean, well lit, and organized. **DO NOT** work in an area that has slippery floor surfaces from debris, grease, and wax.

6. **ALWAYS** unplug the machine from the electrical receptacle before making adjustments, changing parts or performing any maintenance.

7. **AVOID ACCIDENTAL STARTING**. Make sure that the power switch is in the "OFF" position before plugging in the power cord to the electrical receptacle.

⚠ WARNING

8. **AVOID** a dangerous working environment. **DO NOT** use electrical tools in a damp environment or expose them to rain.

⚠ WARNING

9. **CHILDPROOF THE WORKSHOP AREA** by removing switch keys, unplugging tools from the electrical receptacles, and using padlocks.

10. **DO NOT** use electrical tools in the presence of flammable liquids or gasses.

11. **DO NOT FORCE** the machine to perform an operation for which it was not designed. It will do a safer and higher quality job by only performing operations for which the machine was intended.

12. **DO NOT** stand on a machine. Serious injury could result if it tips over or you accidentally contact any moving part.

13. **DO NOT** store anything above or near the machine.

14. **DO NOT** operate any machine or tool if under the influence of drugs or alcohol.

15. **EACH AND EVERY** time, check for damaged parts prior to using any machine. Carefully check all guards to see that they operate properly, are not damaged, and perform their intended functions. Check for alignment, binding or breakage of all moving parts. Any guard or other part that is damaged should be immediately repaired or replaced.

16. Ground all machines. If any machine is supplied with a 3-prong plug, it must be plugged into a 3-contact electrical receptacle. The third prong is used to ground the tool and provide protection against accidental electric shock. **DO NOT** remove the third prong.

17. Keep visitors and children away from any machine. **DO NOT** permit people to be in the immediate work area, especially when the machine is operating.

18. **KEEP** protective guards in place and in working order.

19. **MAINTAIN** your balance. **DO NOT** extend yourself over the tool. Wear oil resistant rubber soled shoes. Keep floor clear of debris, grease, and wax.

20. **MAINTAIN** all machines with care. **ALWAYS KEEP** machine clean and in good working order. **KEEP** all blades and tool bits sharp.

21. **NEVER** leave a machine running, unattended. Turn the power switch to the OFF position. **DO NOT** leave the machine until it has come to a complete stop.

22. **REMOVE ALL MAINTENANCE TOOLS** from the immediate area prior to turning the machine ON.

23. **SECURE** all work. When it is possible, use clamps or jigs to secure the workpiece. This is safer than attempting to hold the workpiece with your hands.

24. **STAY ALERT**, watch what you are doing, and use common sense when operating any machine. **DO NOT** operate any machine tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.

25. **USE ONLY** recommended accessories. Use of incorrect or improper accessories could cause serious injury to the operator and cause damage to the machine. If in doubt, **DO NOT** use it.

26. **THE USE** of extension cords is not recommended for 230V equipment. It is better to arrange the placement of your equipment and the installed wiring to eliminate the need for an extension cord. If an extension cord is necessary, refer to the chart in the GROUNDING INSTRUCTIONS section of this manual to determine the minimum gauge for the extension cord. The extension cord must also contain a ground wire and plug pin.

27. Wear proper clothing, **DO NOT** wear loose clothing, gloves, neckties, or jewelry. These items can get caught in the machine during operations and pull the operator into the moving parts. Users must wear a protective cover on their hair, if the hair is long, to prevent it from contacting any moving parts.

28. **SAVE** these instructions and refer to them frequently and use them to instruct other users.

29. Information regarding the safe and proper operation of this tool is also available from the following sources:

    Power Tool Institute
    1300 Summer Avenue
    Cleveland, OH 44115-2851
    www.powertoolinstitute.org

    National Safety Council
    1121 Spring Lake Drive
    Itasca, IL 60143-3201

    American National Standards Institute
    25West 43rd. St, 4th Floor
    New York, NY. 10036
    ANSI 01.1 Safety Requirements
    For Woodworking Machines
    WWW.ANSI.ORG

    U.S. Department of Labor Regulations
    OSHA 1910.213 Regulations
    WWW.OSHA.GOV

PRODUCT SAFETY

1. Serious personal injury may occur if normal safety precautions are overlooked or ignored. Accidents are frequently caused by lack of familiarity or failure to pay attention. Obtain advice from supervisor, instructor, or another qualified individual who is familiar with this machine and its operations.

2. Every work area is different. Always consider safety first, as it applies to your work area. Use this machine with respect and caution. Failure to do so could result in serious personal injury and damage to the machine.

3. Prevent electrical shock. Follow all electrical and safety codes, including the National Electrical Code (NEC) and the Occupational Safety and Health Regulations (OSHA). All electrical connections and wiring should be made by qualified personnel only.

⚠WARNING

4. **TO REDUCE** the risk of electrical shock. **DO NOT** use this machine outdoors. **DO NOT** expose to rain. Store indoors in a dry area.

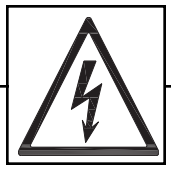
5. **STOP** using this machine, if at any time you experience difficulties in performing any operation. Contact your supervisor, instructor or machine service center immediately.

6. Safety decals are on this machine to warn and direct you to how to protector yourself or visitors from personal injury. These decals **MUST** be maintained so that they are legible. **REPLACE** decals that are not legible.

7. **DO NOT** leave the unit plugged into the electrical outlet. Unplug the unit from the outlet when not in use and before servicing, performing maintenance tasks, or cleaning.

8. **ALWAYS** turn the power switch “OFF” before unplugging the planer.

⚠WARNING



9. **DO NOT** handle the plug or planer with wet hands.

10. **USE** only accessories as described in this manual. **USE** accessories only recommended by Steel City.

11. **DO NOT** pull the planer by the power cord. **NEVER** allow the power cord to come in contact with sharp edges, hot surfaces, oil or grease.

12. **DO NOT** unplug the planer by pulling on the power cord. **ALWAYS** grasp the plug, not the cord.

13. **REPLACE** a damaged cord immediately. **DO NOT** use a damaged cord or plug. **DO NOT** use if the planer is not operating properly, or has been damaged, left outdoors or has been in contact with water.

14. **DO NOT** use the planer as a toy. **DO NOT** use near or around children.
15. **ENSURE** that the machine sits firmly on the floor before using. If the machine wobbles or is unstable, correct the problem by using shims or blocks prior to operation.
16. This machine is designed to process **WOOD ONLY**.

⚠WARNING

17. **NEVER** position fingers or thumbs near the infeed roller.

18. Long pieces of stock should **ALWAYS** be supported with some type of fixture.
19. **DO NOT** operate planer with dull or damaged blades.
20. **MAKE CERTAIN** that the planer is properly adjusted prior to use.
21. **DO NOT** try and remove excessive amounts of wood in one single pass.
22. **INSPECT** all stock before planing, ensuring that there are no foreign objects embedded in the wood, loose knots, or knots that may become loose during operation.

⚠WARNING

23. **DO NOT** attempt to remove jams until power is disconnected and all moving parts have come to a complete stop.

24. **MAKE SURE** that there is adequate operating space on both the infeed and outfeed sides of the planer before operating.
25. **DO NOT** attempt to plane wood that is less than 7" long or less than 1/8-inch thick.

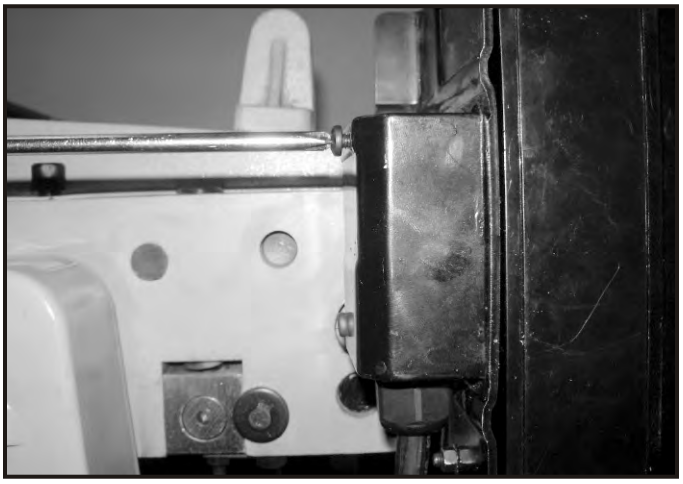
ELECTRICAL REQUIREMENTS

⚠WARNING

TO PREVENT electrical shock, follow all electrical and safety codes, including the National Electrical Code (NEC) and the Occupational Safety and Health Regulations (OSHA). All electrical connections and wiring should be made by qualified personnel only.

TO REDUCE the risk of electrical shock, **DO NOT** use machine outdoors. **DO NOT** expose to rain. Store indoors in a dry area.

Fig. A

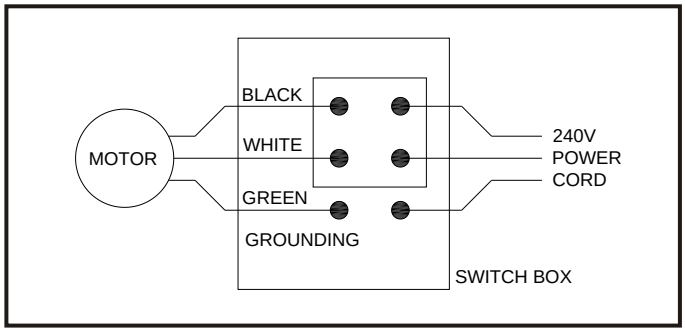


DO NOT connect the machine to the power source before you have completed the set up process. **DO NOT** connect the machine to the power source until instructed to do so.

The switch provided with your planer is designed for 240V single phase use only.

1. The switch has a power cord without plug attached. There are many different configuration for 240V outlets. A UL/CSA approved plug that matches the configuration of your 240V outlet must be installed before you can operate this tool.
2. The switch junction box is attached behind of switch mounting plate. Loose 2 of fastening screws and remove the cover then connecting the related wire leader of power cord as pictures showed. **SEE FIG A.**

Note: For safety requirement the power cord as recommend.please refer the instruction of the extension cord on next page. Secured the all the fastening screws which f-or wire leader and grounding wire, replace junction box cover and tighten the fastening screw.



GROUNDING INSTRUCTIONS

⚠WARNING

This machine **MUST BE GROUNDED** while in use to protect the operator from electric shock.

In the event of a malfunction or breakdown, **GROUNDING** provides the path of least resistance for electric current and reduces the risk of electric shock. The plug **MUST** be plugged into a matching electrical receptacle that is properly installed and grounded in accordance with **ALL** local codes and ordinances.

If a plug is provided with your machine **DO NOT** modify the plug. If it will not fit your electrical receptacle, have a qualified electrician install the proper connections to meet all electrical codes local and state. All connections must also adhere to all of OSHA mandates.

IMPROPER ELECTRICAL CONNECTION of the equipment-grounding conductor can result in risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment-grounding conductor. **DO NOT** connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

PLUGS/RECEPTACLES

⚠WARNING

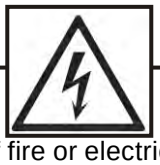
- Electrocution or fire could result if this machine is not grounded properly or if the electrical configuration does not comply with local and state electrical codes.
- **MAKE CERTAIN** the machine is disconnected from power source before starting any electrical work.
- **MAKE SURE** the circuit breaker does not exceed the rating of the plug and receptacle.

The motor supplied with your machine is a 240 volt, 60 hertz, single phase motor. Never connect the green or ground wire to a live terminal

A machine with a 240 volt plug should only be connected to an outlet having the same configuration as the plug.

EXTENSION CORDS

⚠WARNING



To reduce the risk of fire or electrical shock, use the proper gauge of extension cord. When using an extension cord, be sure to use one heavy enough to carry the current your machine will draw.

The smaller the gauge-number, the larger the diameter of the extension cord is. If in doubt of the proper size of an extension cord, use a shorter and thicker cord. An undersized cord will cause a drop in line voltage resulting in a loss of power and overheating.

⚠CAUTION

USE ONLY a 3-wire extension cord that has a 3-prong grounding plug and a 3-pole receptacle that accepts the machine's plug.' s

If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.

Make certain the extension cord is properly sized, and in good electrical condition. Always replace a worn or damaged extension cord immediately or have it repaired by a qualified person before using it.

Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

MINIMUM RECOMMENDED GAUGE FOR EXTENSION CORDS (AWG)			
240 VOLT OPERATION ONLY			
	25' LONG	50' LONG	100' LONG
0 to 6 Amps	16 AWG	16 AWG	14 AWG
6 to 8 Amps	16 AWG	16 AWG	12 AWG
8 to 12 Amps	14 AWG	14 AWG	10 AWG
12 to 15 Amps	12 AWG	12 AWG	10 AWG
15 to 20 Amps	10 AWG	10 AWG	Not recommended

UNPACKING & INVENTORY

⚠WARNING

- The machine is heavy; a forklift or overhead lift are required to lift the machine.
- Use a safety strap to avoid tip over when lifting machine.

Check shipping carton and machine for damage before unpackaging. Carefully remove packaging materials,parts and machine from shipping carton.Always check for and remove protective shipping materials around motors and moving parts.Lay out all parts on a clean work surface.

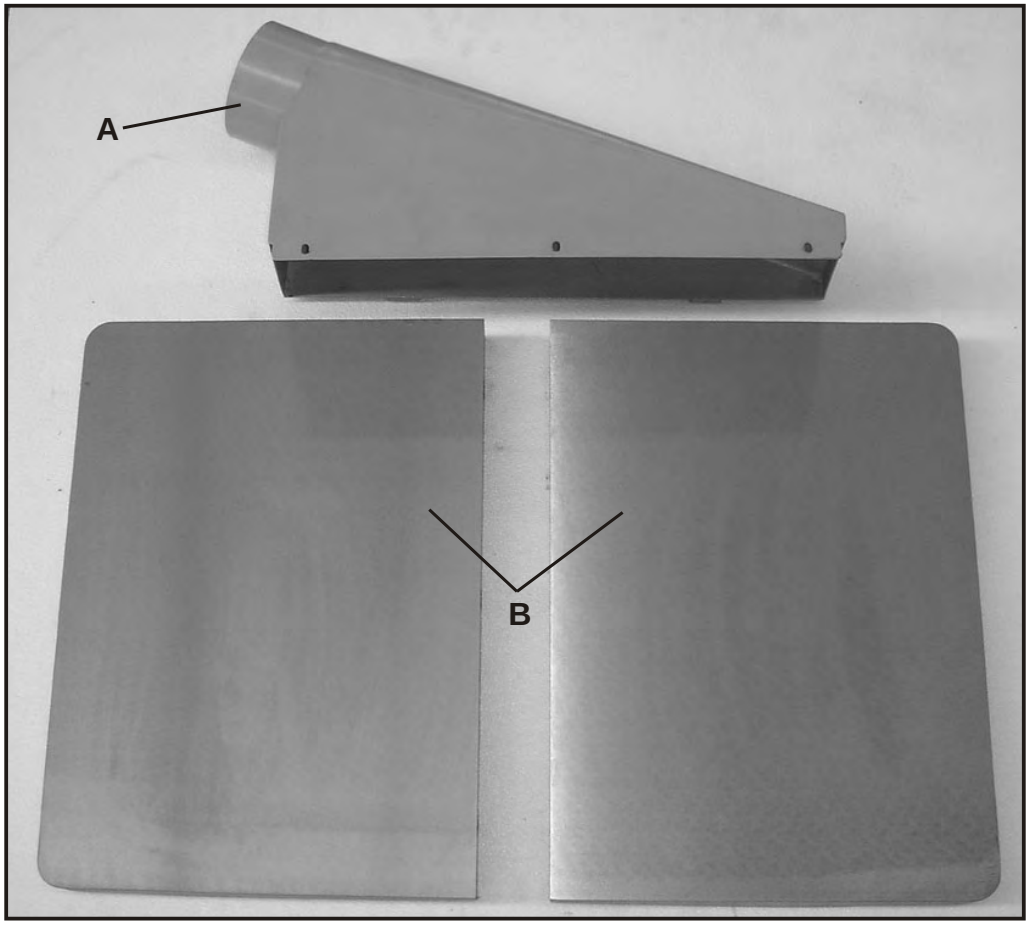
Remove any protective materials and coatings from all of the parts and the planer. The protective coatings can be removed by spraying WD-40 on them and wiping it off with a soft cloth. This may need redone several times before all of the protective coatings are removed completely.

After cleaning, apply a good quality paste wax to any unpainted surfaces. Make sure to buff out the wax before assembly.

Compare the items to inventory figures; verify that all items are accounted for before discarding the shipping box.

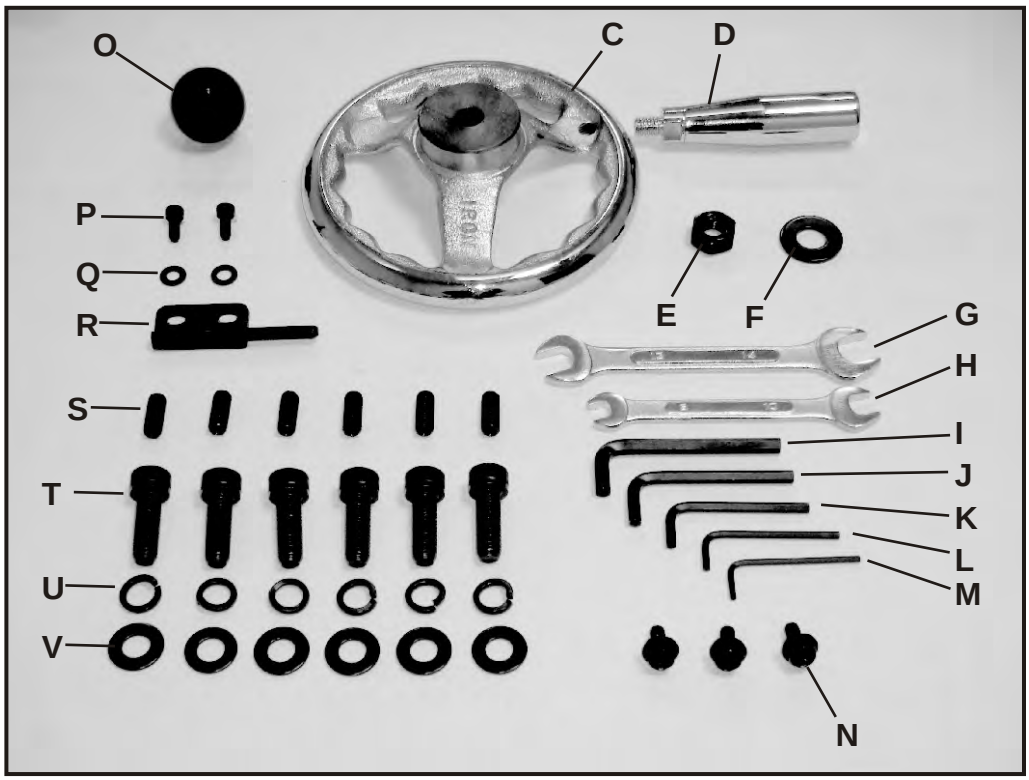
⚠WARNING

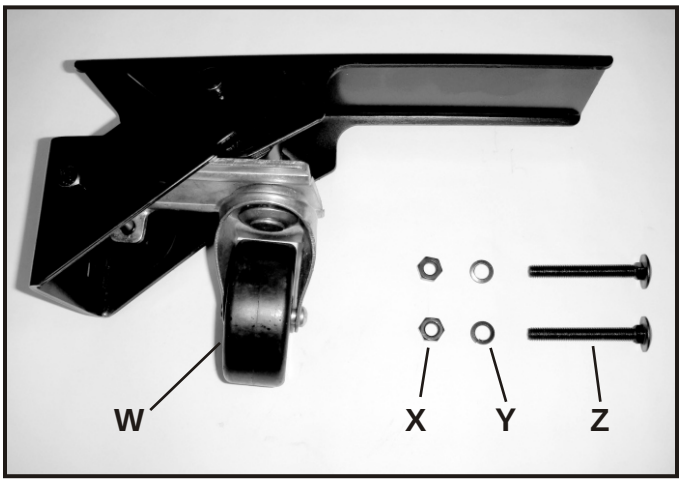
If any parts are missing, do not attempt to plug in the power cord and turn “ON” the machine. The machine should only be turned “ON” after all the parts have been obtained and installed correctly. For missing parts, contact Steel City at 1-877-SC4-TOOL.

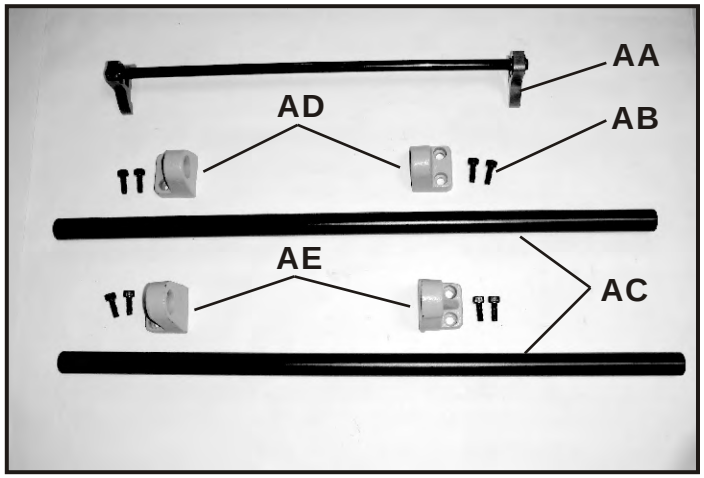


A) Dust Chute
B) Extension Wings

(C) Handwheel
(D) Handle
(E) M12 Hex Nut
(F) 13 x 28 x 3t Flat Washer
(G) 12-14mm Open End Wrench
(H) 8-10mm Open End Wrench
(I) 6mm Allen Wrench
(J) 5mm Allen Wrench
(K) 4mm Allen Wrench
(L) 3mm Allen Wrench
(M) 2.5mm Allen Wrench
(N) M6 x 12mm Hex Head Serrated Screw
(O) Knob
(P) M5 x 12mm Hex Soc Hd Screw
(Q) 5.2x12x2t Flat Washer
(R) Hinge Bracket Right
(S) M8 x 20mm Hex Soc Set Screw
(T) M10 x 30mm Hex Soc Hd Screw
(U) M10 Lock Washer
(V) 10.2x21x2t Flat Washer







(W) Locking Foot Pedal
(X) M8 Hex Nut
(Y) M8 Lock Washer
(Z) M8 x 65mm Carriage Hd Screw

(AA) Knife Setting Jig
(AB) M6 x 16mm Hex Soc Hd Screw
(AC) Roller
(AD) Rear Roller Bracket
(AE) Front Roller Bracket

ASSEMBLY

Before beginning assembly, take note of the following precautions and suggestions

⚠CAUTION

FLOOR

This tool distributes a large amount of weight over a small area. Most commercial floors are appropriate for this unit, however, in residential use, flooring may need added reinforcement to accommodate the weight of the machine and operator.

WORKING CLEARANCES

Take into consideration the size of the material to be processed, space for auxiliary stands, work benches, etc. before setting up this machine. Make sure that you allow enough space for your machine to operate freely.

OUTLET PLACEMENT

Outlets should be located close enough to the machine so that the power cord or extension cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and or outlets.

⚠WARNING

1. **DO NOT** assemble the Planer until you are sure the tool is not plugged in.

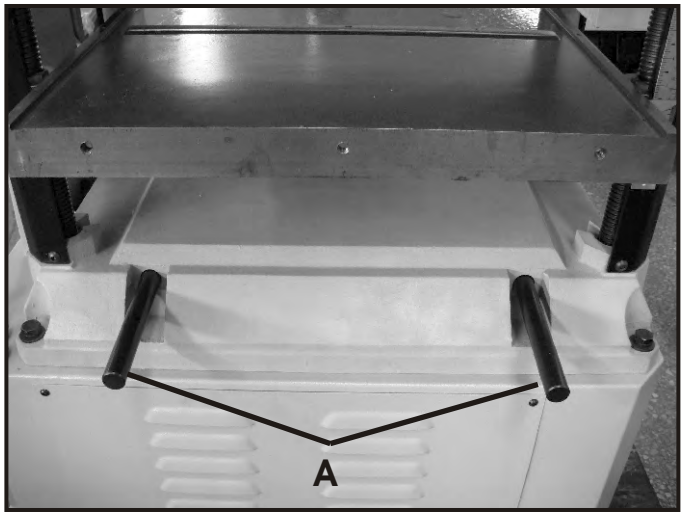
2. **DO NOT** assemble the Planer until you are sure the power switch is in the OFF position

3. For your own safety, **DO NOT** connect the machine to the power source until the machine is completely assembled and you read and understand the entire User Manual.

⚠WARNING

This planer is a very heavy piece of equipment. To assist with moving the unit, this Planer contains lifting handles (A) that slide out from the base of the planer head. SEE FIG 1. These handles can be used as lifting points using a forklift or overhead lift. Attempting to lift this unit without the proper equipment or adequate assistance could result in a serious injury.

Fig. 1



HANDWHEEL

The purpose of the handwheel is for raising and lowering the planer table

1. Locate the handwheel shaft at the front right corner of the planer.

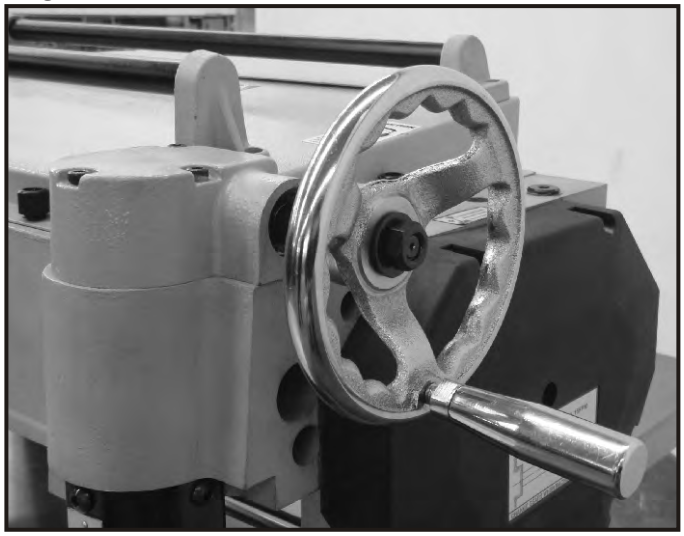
2. Insert key (Key is taped to shaft) into the keyway on the handle shaft.

3. Line up the notch in the handwheel with the key and slide the handwheel onto the handle shaft.

4. Secure the handwheel using one M12 hex nut and one M12 flat washer provided. **SEE FIG 2.**

5. Screw handle into the threaded hole on the handwheel.

Fig. 2



LOCKING FOOT PEDAL

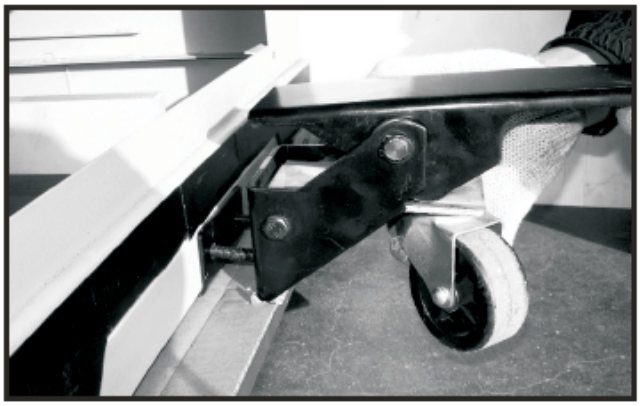
Note : Assembled the locking foot pedal assembly on to the planer before remove the planer from metal pallet.

1. Loosen 4 of M6 x 10mm pan head screws remove the cabinet front cover for assembly the locking foot Pedal.

2. Use 2 of (Z) M8 x 65mm carriage head screws assembly the foot pedal on to tube mounting holes which on the front below position of cabinet.

3. Assembly both M8 lock washers and tighten the M8 hex nuts. Replace the cabinet front cover. **SEE FIG 3.**

Fig. 3



DUST CHUTE

This planer features a 5-in dust chute for use with a dust collection system. If this planer is not to be hooked up to a dust collection system, **DO NOT** attach the dust chute.

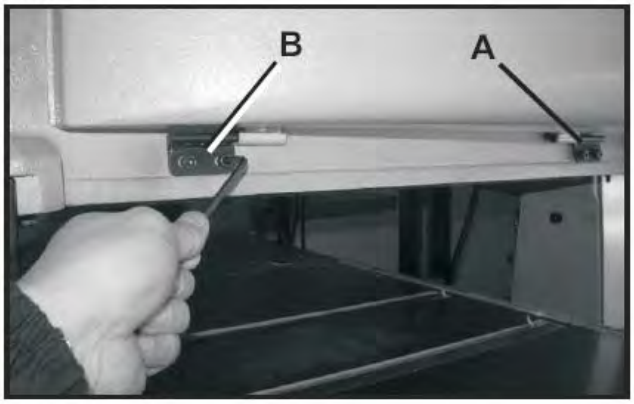
1. Assembly the dust chute on to the left hinge bracket (A) which assembled on the back of left side of cutter head casting. **SEE FIG 4.**

2. Assembly the right hinge bracket (B) on the right side of dust port.

3. Use 4 mm allen wrench to tight both of 2 M5 x 12 mm hex soc screws and M5 washers to secure the right hinge bracket.

4. Unbolt the upper cover from the planer to allow access to the screw holes.Fig. 417A

Fig. 4



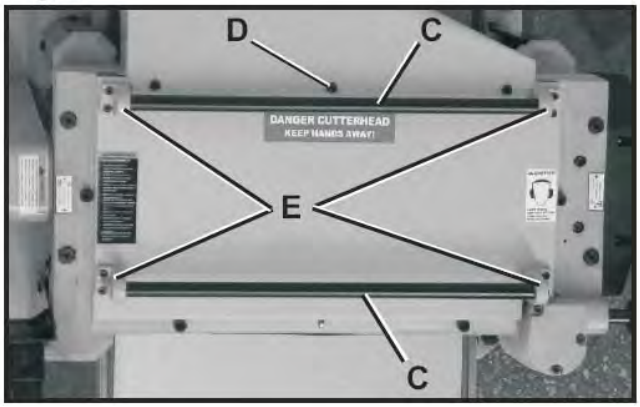
5. To attach the dust chute, mount the dust chute above the upper cover on the planer.

6. Line up the 3 holes on the top of the dust chute with the 3 holes on the upper cover and fasten with three M6 x 12mm hex head serrated screws (D). **SEE FIG 5.**

7. Use three M6 x 12mm hex head serrated screws and fasten the dust chute to the body of the planer.

8. Rebolt the upper cover to the planer.

Fig. 5



9. Assembly the either side of both front / rear roller bracket (E) and do not securing the screws. **Note:** The front roller bracket should be assembled on the front side of upper cover and rear roller bracket should be on the rear side.

10. Assembly both rollers on to roller bracket then the other side of roller bracket and tighten all the screws.

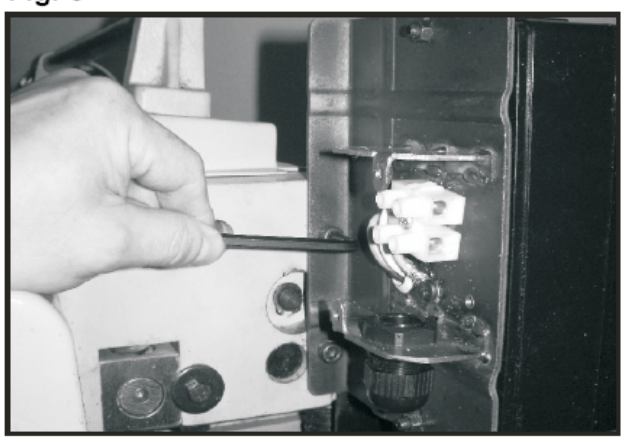
11. Spin rollers (C) by hand to insure that they move freely.

SWITCH BRACKET ASSEMBLY

1. Find the hardware of 2 M6 x 16mm hex soc head screws and M6 lock washer for assembly the switch bracket on the left hand side of cutter head casting.

2. Use 5mm allen wrench and tighten the 2 of M6 x 16 mm hex soc screws. SEE FIG 6.

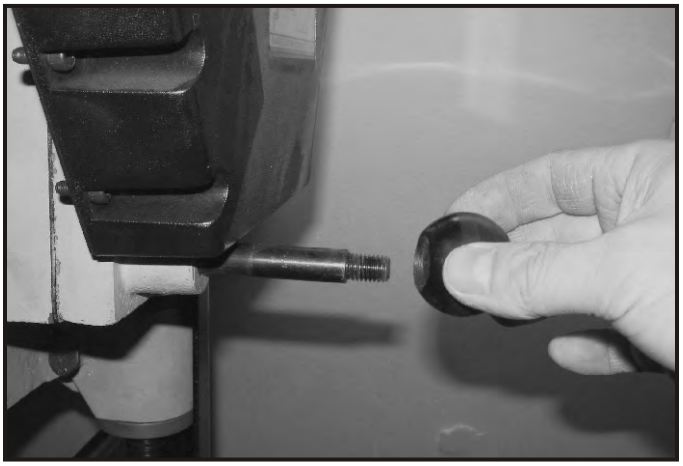
Fig. 6



GEARBOX SHAFT KNOB ASSEMBLY

Assembly the knob on to the shaft as Fig 7 showed.

Fig. 7



EXTENSION TABLES

The extension table support the workpiece as it enters and exits the planer.

1. To mount the extension tables, thread three M8 x 20mm set screws into the bottom holes of the extension table. Only screw them in about 1/3 of the way for now.
2. Using three M8 x 25mm hex head mounting bolts, mount one extension table to the main table. **SEE FIG 8.**

Fig. 8

3. Place a straight edge on the main table so that it lies flat on the table and extends out over the extension table. **SEE FIG 9.**

Fig. 9

4. Adjust the three set screws until edge of the extension table that is the furthest away from the main table is even with the straight edge. Please note that it may take several combinations of loosening and/or tightening the set screws and mounting bolts to get the extension table level with the main table.
5. Repeat steps 1-4 to attach the other extension table to the other side of the main table.

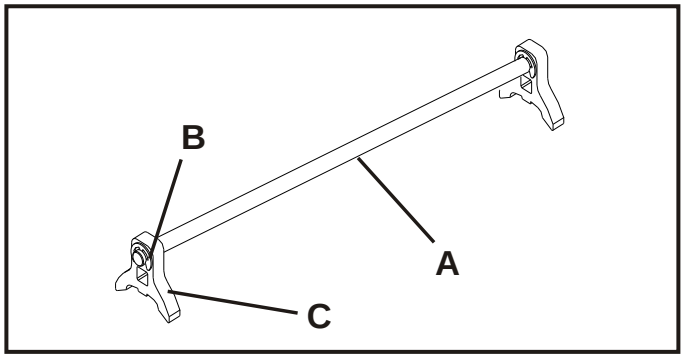
KNIFE SETTING JIG

The knife setting jig provides a convenient way to make setting the knives quick and simple.

1. To assemble the knife setting jig, snap one of the e clips (B) over the notch on one end of the knife setting rod (A).
2. Slide both of the knife setting jig brackets (C) onto the rod.
3. Snap on the other e clip to the opposite end of the rod. **SEE FIG 10.**

Note : Planer knives are extremely sharp. Please use extra caution when your hands are near the blades.

Fig. 10



ADJUSTMENTS

Some of the adjustments covered in this section have already been made at the factory. It is still a good idea to familiarize yourself with all of the following procedures so that you have a solid understanding of the planers operation.

TABLE PARALLELISM ADJUSTMENT

To make adjustments to the table, it is necessary to make a gauge block.

When constructing this block, be sure to use a hardwood such as oak or maple. **DO NOT** use standard 2 x 4 material. A diagram for this block is located near the end of the manual.

NOTICE: A substitute for this gauge block would be to use a magnetic dial indicator. Anywhere it calls for use of the gauge block in this section, you may substitute with the dial indicator.

⚠WARNING

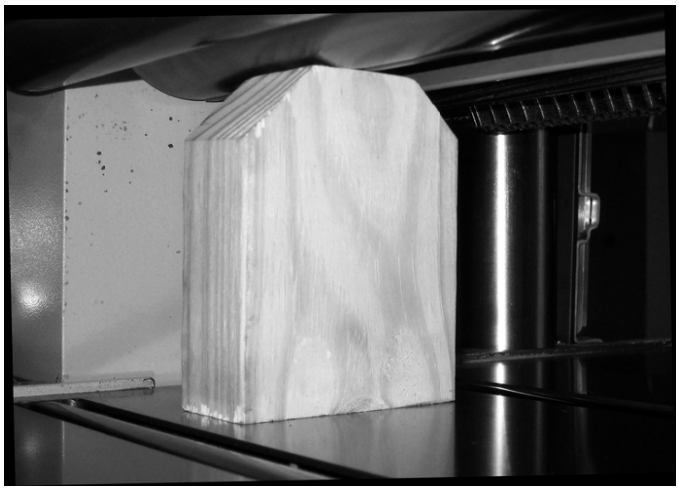
DO NOT make adjustments while the planer is running. Make certain that the switch is in the off position and that the machine is disconnected from the power source.

⚠CAUTION

Planer knives are extremely sharp. Please use extra caution when your hands are near the blades.

1. Having the table parallel to the cutterhead is essential for planing stock perfectly square. Check this byplacing the gauge block that you have constructed under the left end of the cutterhead.
2. Turn the handwheel clockwise to raise the table so that the block barely touches the left side of the body of the cutterhead. **NOTE:** Make sure that the block is actually touching the body of the cutterhead and not the knives. **SEE FIG 11.**
3. Slide the block to the right taking note of any gaps between the top of the block and the bottom of the cutterhead body. Measure any of these gaps with a feeler gauge.
4. When moving the block from left to right, if the block wedges tightly between the cutterhead and the table, repeat steps 2 and 3, but start from the right side of the cutterhead body and slide to the block to the left.

Fig. 11



5. Referring back to your measurements with the feeler gauge, if the gap difference from one side to the other is .004" or less, no adjustment will be necessary.

   If the gap is greater than .004", but less than .016", proceed to step 6.

   If the gap is greater than 0.016", refer to the ADJUSTING CHAIN DRIVE section in the ADJUSTMENTS section of the manual.
6. For gap differences between .005" and .016", determine which side of the table needs to be raised to fix the gap .
7. Loosen both sets of screws for each column on the side that needs adjusted.
8. Pull up or push down on the table in the direction that it needs to move, hold in position and retighten the screws.
9. Repeat these steps until the variance is .004" or less.

CHAIN ADJUSTMENTS

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

The chain drive in your planer transfers movement from the hand wheel driven column to the three other support columns. The chain drive may require an adjustment to remove slack as the chain stretches over time, or as part of table leveling procedures.

CHAIN TENSION

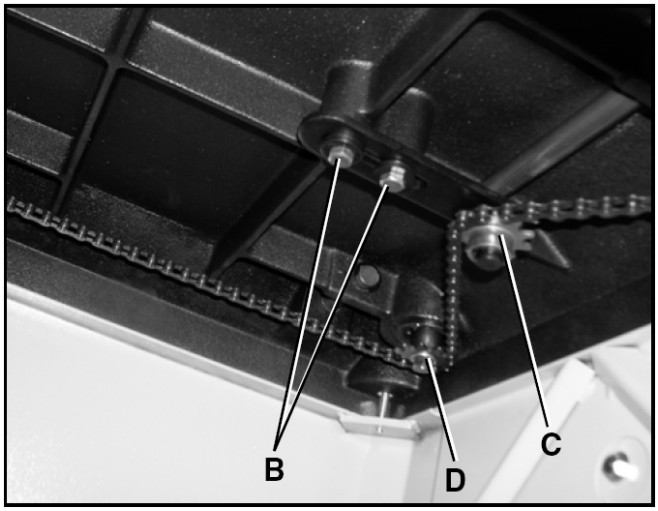
To adjust Chain Tension:

1. Remove the access panel (A) on the stand. **SEE FIG 12.**

Fig. 12

2. Loosen the two hex head bolts (B) that fasten the idler sprocket (C) to the base and move the idler sprocket until excess slack in the chain has been eliminated. **SEE FIG 13.**

Fig. 13



3. Retighten the two hex head bolts.

4. Replace access panel.

ADJUSTING CHAIN DRIVE

Notice: The following steps should only be done AFTER you have gone through the TABLE PARALELLISM ADJUSTMENT section of this manual and the measurements you attained from that section are greater than .016".

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. Remove the panel (A) to gain access to the chain drive assembly. **SEE FIG 12.**

2. Loosen two hex head bolts (B) that fasten the idler sprocket (C) to the base until you can turn each corner sprocket (D) independently. One of the corner sprockets is shown in **Fig 13.**

Notice: If the chain drive is loosened too much, it will fall off all of the sprockets. Replacing a chain that has come off the sprockets is a very tedious process. Make sure to loosen the idler pulley just enough to allow you to be able to turn the corner sprockets.

3. Each tooth on a corner sprocket represents .016" of vertical movement as it turns.

4. Whichever end of the table is too high, turn the sprockets at that end of the table clockwise to lower the table. For example if the back end of the table is too high, the back two sprockets would need to be rotated clockwise to lower the back side of the table. If the right end of the table is too high, the right two sprockets would be rotated clockwise to lower the right side, etc.

Notice: Make certain, as you turn the sprockets, to keep an accurate tooth count to ensure that the table is lowered equally on a specific side.

5. Recheck Table Parallelism using your gauge block. Once the tolerance is less than .016", replace access cover and refer back to the TABLE PARALELLISM ADJUSTMENT section in the ADJUST-MENT section of this manual.

KNIFE INSPECTION

⚠CAUTION

Planer knives are extremely sharp. Please use extra caution when your hands are near the blades.

The Planer knives are set at the factory using jack screws. Springs are also included with your planer which may be used instead of the jack screws, depending on your preference. These springs are installed beneath the knives.

You can leave the springs in place as it will not affect the adjustments if they are not removed.

If you prefer to use the spring adjustment method, you will need to remove each knife, remove the jack screws, leave the two springs under each knife and replace the knife. Follow the steps below if using the spring adjustment method.

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

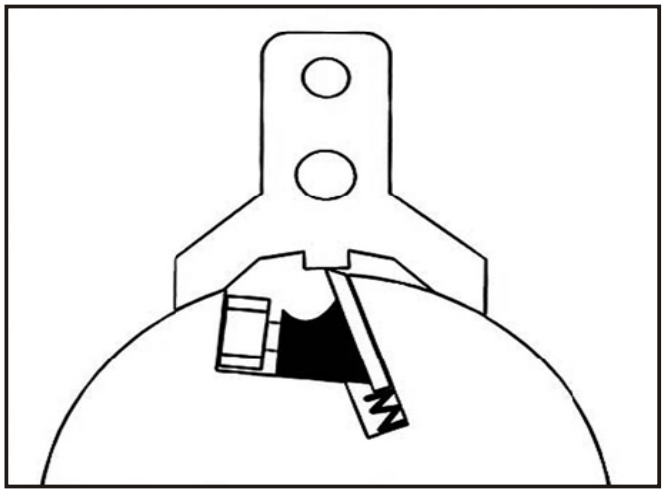
1. Move the hinged dust port and upper cover assembly to expose the cutterhead. **SEE FIG 14.**

Fig. 14

2. Remove the belt guard. Turn the cutterhead (using the pulley) until the first knife is top dead center.

3. Using the knife setting gauge, check the knife height. The jig should set with both feet on the cutterhead. **SEE FIG 15.** If the knife is properly adjusted, the contact point at the center of the gauge should just touch the tip of the knife. If the knife does not make contact, or if the knife is high enough to cause the legs of the gauge not to set on the cutterhead, the knives will need adjusted. Be sure to inspect all 4 knives in the same manner.

Fig. 15



The planer knives will need to be adjusted periodically and ultimately will need to be removed to be sharp-ened. Adjustments should be as precise as possible with tolerances within .002" - .003". This will help prolong the sharpness of the knife edges. Improperly adjusted knives can cause an imbalance condition in the cutter-head and shorten bearing life, as well as produce sub-standard results.

4. Loosen the gib bolts by turning them clockwise until the knife is loose in the slot.

5. Carefully remove the knife.

6. Unscrew the jack screws completely from the threaded hole and remove.

7. Be sure that there is one spring in each of the two holes in the bottom of the knife slot. **SEE FIG 16.**

NOTICE: The springs **DO NOT** go into the threaded hole where the jack screws were installed.

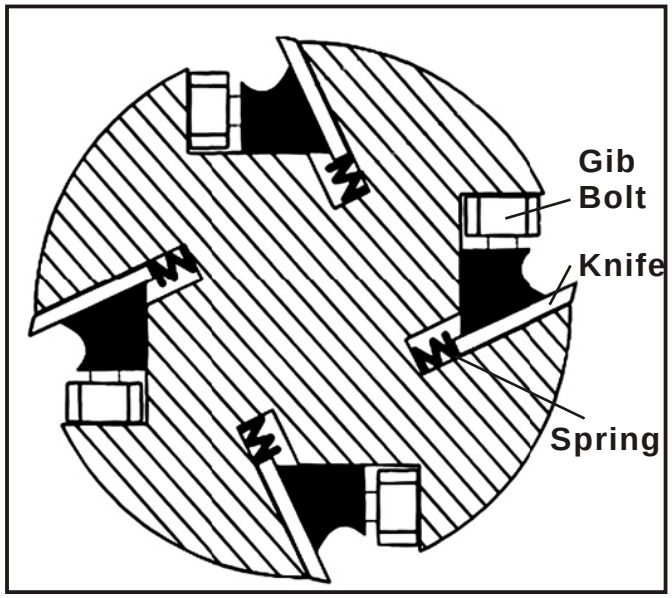
Fig. 16

KNIFE ADJUSTMENT

The knives are locked in the cutterhead with wedge type gibs and gib bolts. Springs located under the knives assist in setting the knife height. Jack screws under the knives allow fine tuning to help out in the setting process.

1. **MAKE CERTAIN THE MACHINE IS DISCONNECTED FROM THE POWER SOURCE.**
2. Move hinged upper cover assembly to expose the cutterhead.
3. Loosen the gib bolts until the knife is loose in the slot. The gib bolts turn clockwise to loosen and counterclockwise to tighten. **SEE FIG 17.**

Fig. 17



4. Place the knife setting jig over the knife on the cutterhead as shown in Fig 18. The feet of the jig should be securely planted on the cutterhead, making sure the gauge rod remains parallel to the cutterhead. **SEE FIG 18.**
5. Lower the jack screws as low as possible.
6. Maintain a steady pressure on the knife setting jig while retightening the gib bolts. The springs in the cutterhead will push up on the knife allowing for proper alignment of the knives.
7. Once gib bolts are tightened, raise jack screws until they just touch the bottom of the knife. You should feel resistance when the jack screw touches the bottom of the knife.

NOTICE: When making adjustments to the planer knives, all four knives must be adjusted the same.

DO NOT adjust one knife without adjusting the others as this can result in knife damage, poor performance and possible injury to the operator.

Fig. 18

CHIP BREAKER

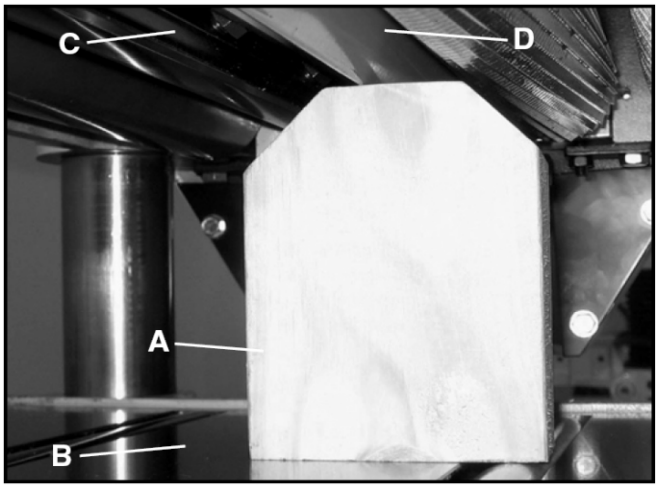
The chip breaker is located on the top side of the planer and it extends down around the front of the cutterhead. The purpose of the chip breaker is to prevent deep gouging, also known as tear-out,as the knives do their job. It works by breaking up the woodchips as they are being cut by the knives. The chip breaker also deflects and shoots out the woodchips away from the surface of the board and out the planer.

⚠WARNING

DO NOT make adjustments while the planer is running. Make certain that the switch is in the off position and that the machine is disconnected from the power source.

1. Move the hinged upper cover assembly and lower the table.
2. Make sure that the knives are properly adjusted.
3. Place the gauge block (A) on the table (B) directly under the cutterhead (C). **SEE FIG 19.**
4. Rotate the cutterhead until one of the knives are at its lowest point.
5. Using a .040" feeler gauge between the gauge block and the cutterhead, raise the table until the knife just touches the feeler gauge.

Fig. 19

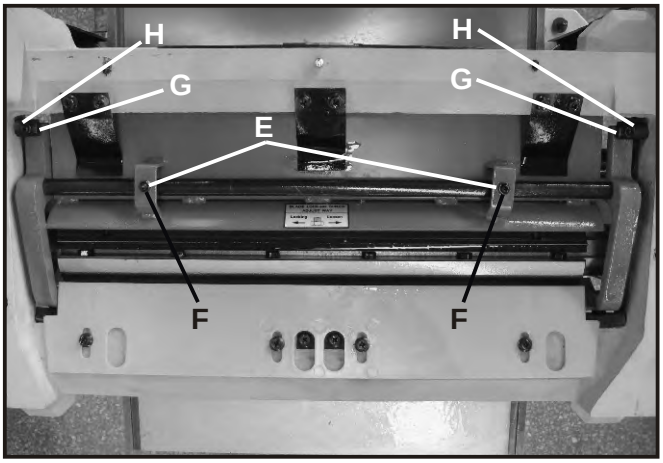


6. Remove your feeler gauge and slide the gauge block under one side of the chip breaker (D).The chip breaker should just touch the top of the gauge block.

7. Slide the gauge block to the opposite side of the chip breaker, checking it the same way.

8. If any adjustment is necessary, loosen the locknuts(E)and turn the setscrews(F).stop turning when the chipbreaker just touches the top of the gauge block. **SEE FIG 20.**

Fig. 20



9. Retighten both lock nuts and replace hinged dust hood.

PRESSURE BAR

The pressure bar, like the chipbreaker, controls lumber as it passes under the cutterhead. The pressure bar helps to keep the lumber from lifting after it has been planed. Incorrect positioning of the pressure bar can result in a number of undesirable results such as snipe or chatter marks. Setting the pressure bar too low can also place excess load on the motor. To adjust the pressure bar:

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. Remove the hinged top cover and dust chute assembly.

2. Place the gauge block (A) on the table (B) directly under the cutterhead (C). **SEE FIG 19.**

3. Rotate the cutterhead until one of the knives are at its lowest point.

4. Loosen both locknuts(G) **SEE FIG 20.**

5. Place Gauge block under the center of the pressure bar and adjust both of the setscrews(H) until the pressure bar just touches the tip of the block.

6. Once the bar is set, retighten both of the locknuts and replace top cover and dust chute.

FEED ROLLER HEIGHT

The infeed and outfeed rollers are responsible for moving the workpiece through the machine and pressing the workpiece flat against the main table.

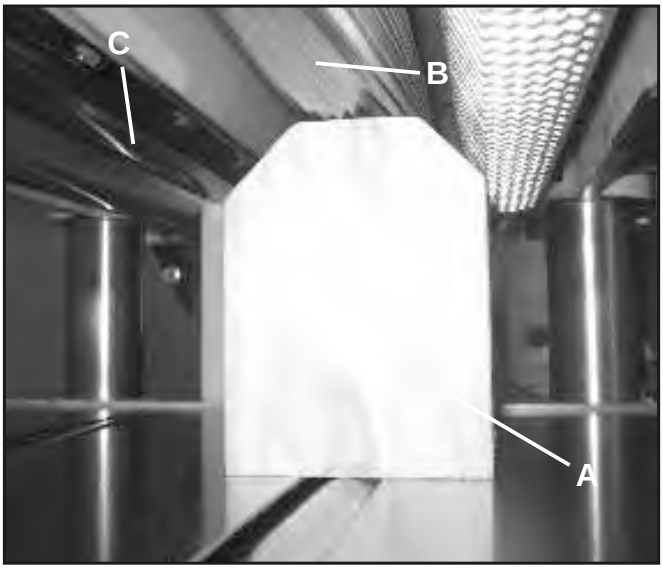
⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. Lower the table so the gauge block(A)fits under one side of the infeed roller (B).

2. Raise the table until the gauge block just barely touches one side of the infeed roller. **SEE FIG 21.**

Fig. 21



3. Push the gauge block through so that it is under the edge of one of the knives.

4. Turn the cutterhead (C) by hand using the pulley until one of the knives are in its lowest position.

5. Using a feeler gauge, check the clearance between the top of the gauge block and the edge of the knife. Clearance should be .040".

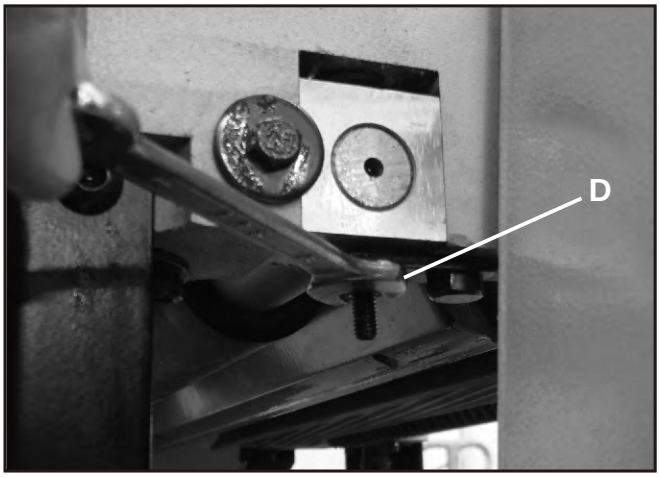
6. Repeat steps 1-5 for the opposits side of the roller.

7. Repeat this same process for the outfeed roller, If any adjustment is necessary continue on to step 8.

8. Remove the gear box cover to access the roller adjustments on the drive chain side on the planer. One socket head cap screw holds the drive chain cover in place.

NOTE: There are two metal guard plates bolted to the backside of the gear box cover. It may be necessary to remove one of these guards in order to remove the gear box cover.

Fig. 22



9. Loosen the roller adjustment check nuts (D) to change the height of the roller. **SEE FIG 22.**
10. When the roller is set in the correct position, re-tighten the check nuts from step 9.
11. Recheck roller height and repeat steps 8-10 if necessary.

FEED ROLLER PRESSURE

Infeed and outfeed roller pressure is an important aspect of any planer. When the workpiece is fed through the planer, the correct amount of pressure will help ensure that the board does not slip (too little pressure) or does not jam (too much pressure).

NOTICE: Excessive pressure may damage workpiece It's important to note that different lumber will require varying amounts of pressure, so you may have to experiment with different settings. While some rough cut lumber will go through the planer with little trouble at one pressure setting. Other pieces may have some more difficulty.

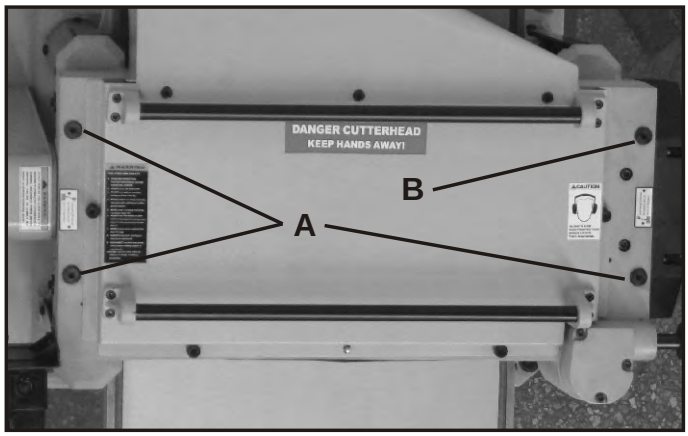
NOTICE: Adjusting the roller pressure does not affect height.

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. Before adjusting roller pressure, ensure that the knives and feed rollers are set correctly.
2. Unscrew the four large pressure set screws (A and B) on the top of the planer body. **SEE FIG 23.**

Fig. 23



3. Remove the springs that are in the holes left by the set screws and check for any dirt or grit, cleaning off any dirt and replace springs.
4. Screw the three regular pressure set screws (A) back in until they are flush with the top of the head casting.
5. Screw in the light pressure set screw (B) until it is about 1/4" above the head casting. The reason this screw is not tightened as much as the other three is that the feed chain helps apply the needed tension to this side of the outfeed roller.
6. Tightening the set screws down further will **INCREASE** roller pressure, while backing them off will **DECREASE** roller pressure.

BED ROLLERS

The bed rollers aid the movement of the workpiece through the planer. The height of these rollers will vary depending on the types of wood. For rough stock, the rollers should be set slightly higher to keep the lumber from dragging along the bed. For smooth lumber, the rollers should be set just above the surface of the table.

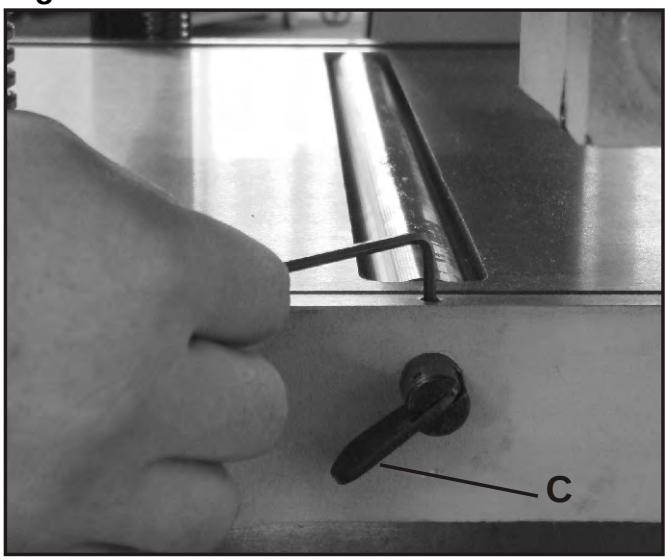
⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. Lay a straight edge across both of the table rollers.
2. Using a feeler gauge, measure the clearance between the bottom of the straight edge and the table. Make sure to measure in several places.
3. If measurement is between .002" and .005", the clearance is acceptable. If you do not have a measurement of .002" to .005" go to step 4.
4. Loosen the set screws located on both sides of each roller.

5. Hold the adjusting plate (C), turn the eccentric shafts to adjust the roller height up or down as shown in **SEE FIG 24.**

Fig. 24



6. Repeat steps 1-5 until clearance is .002" to .005".

7. Retighten all set screws.

8. Spin rollers by hand to ensure that they move freely.

CHIP DEFLECTOR

The chip deflector (A) is the plastic plate under the top cover that keeps woodchips from falling onto the outfeed roller. **SEE FIG 25.**

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. The beveled edge of the deflector should be about 1/8"-1/4" from the knife edge. Check this by carefully rotating the cutterhead by hand to gauge the distance between the chip deflector and the knives.

⚠CAUTION

If the chip deflector is set too close to the knives, the rotating cutterhead may pull it in and destroy it.

2. If adjustment is necessary, loosen the three deflector mounting bolts.

Fig. 25

3. Make sure the beveled edge of the deflector faces the cutterhead.
4. Move the deflector until the edge is approximately 1/8”-1/4” from the edge of the knives.
5. Push down on the deflector with a wooden stick and spin the cutterhead by hand to ensure that it does not contact the knives.

⚠CAUTION

Planer knives are extremely sharp. Please use extra caution when your hands are near the blades.

6. Retighten the chip deflector mounting bolts and remount the upper cover and dust port to the planer.

ANTI-KICKBACK FINGERS

Anti-kickback fingers (A) are an added safety feature on this planer. They are suspended from a rod that hangs across the front of the cutterhead casting. These fingers should be inspected regularly, ensuring that they swing freely and easily. **SEE FIG 26.**

Fig. 26

⚠WARNING

DO NOT apply any oil or other lubricant to the antikickback fingers as this can attract dust and restrict the free movement of the fingers. This could result in damage to the planer, the workpiece, or even serious injury to the operator or others in the work area. **DO NOT** attempt to use the planer if the antikickback fingers are not functioning properly.

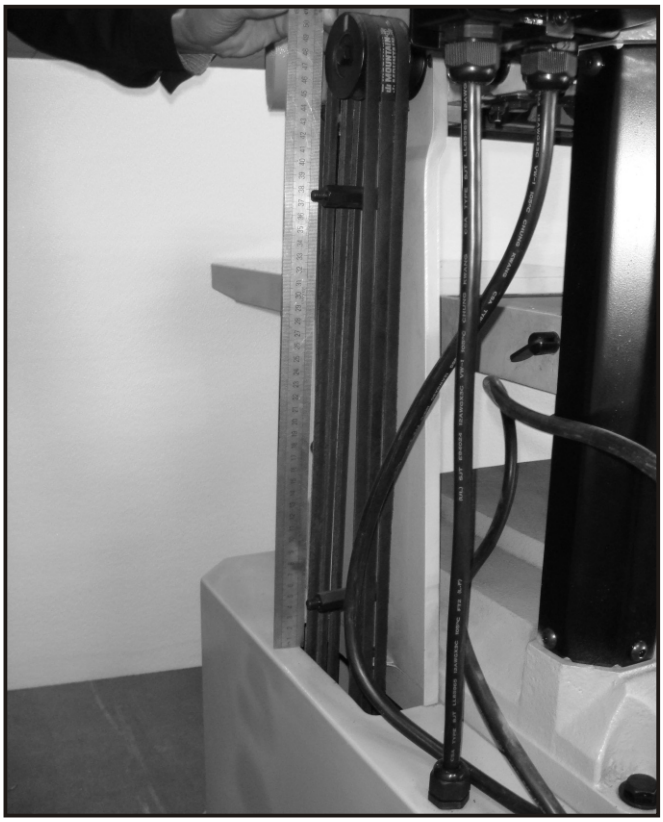
PULLEYS

⚠WARNING

MAKE CERTAIN THE MACHINE IS DISCONNECTED FROM THE POWER SOURCE

1. To inspect pulleys, place a steel ruler or other type of straight edge across the pulleys to check the alignment. If the ruler crosses them evenly, the pulleys are aligned correctly. **SEE FIG 27.**

Fig. 27



2. If pulleys are out of alignment, loosen the bolts (B) the pulley can be adjusted as wall as moving the motor mount bracket. **SEE FIG 28.**
3. Adjust the motor position until the pulleys are aligned.
4. Retighten all bolts.

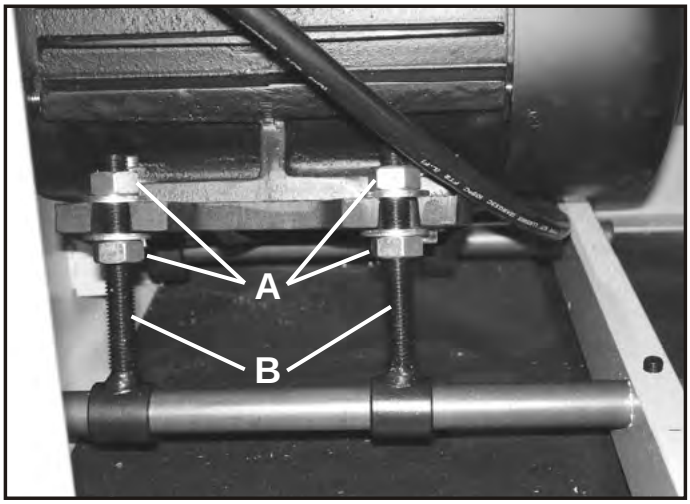
BELTS

⚠WARNING

MAKE CERTAIN THAT THE SAW IS DISCONNECTED FROM THE POWER SOURCE.

1. If the belt is too loose, remove the belt guard using the two threaded knobs.
2. To check belt tension, squeeze the Belts at their midpoint with moderate finger pressure. You should be able to deflect each belt no more than 3/4".
3. Remove the panel at the back of the machine stand to access the motor assembly.
4. The motor pivots on a platform suspended at one end by two threaded adjustment bolts. Adjust the locknuts (A) up or down the shafts until the desired belt deflection is achieved. **SEE FIG 28**.

Fig. 28



GEAR BOX

The gearbox is located just behind the handwheel on the right side of the planer. The gearbox transfers power from the belt driven cutterhead to the power feed rollers. It has a two speed transmission that is controlled by a lever on the right side of the planer. When it is engaged, the power feed rollers will move the workpiece through the planer at either 16 ft/ min or 30 ft/min. The center position on the lever is neutral.

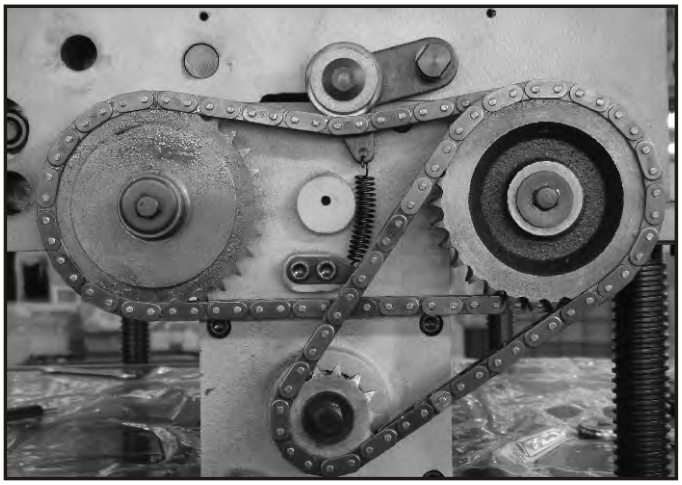
1. To inspect gearbox, loosen the socket head cap screw on the gearbox cover.
2. Pull the cover off the roll pins that hold it in place

NOTE: There are two metal guard plates bolted to the backside of the gear box cover. It may be necessary to remove one of these guards in order to remove the gear box cover.

3. Inspect the bolts that hold the sprockets in place

4. Check the drive chains to make sure that the retaining clips are in place. **SEE FIG 29.**

Fig. 29



OPERATIONS

⚠WARNING

This planer is a very powerful woodworking machine designed and built for professional use. Because of this, the machine should be operated with significant care and caution. Failure to do so could result in severe injury to the operator or others in the work area. Be sure to read this entire manual for all safety precautions before operating this machine.

PLANER SUMMARY

1. Examine all lumber carefully for defects such as twisting, warping, knots, splits, crossgrain, and foreign objects such as nails, staples, etc before running it through the planer. If you are unsure about the quality of the wood, **DO NOT USE IT !!!**
2. Use the full width of the planer. Alternate between the left, right, and center when feeding lumber through the planer. Doing so will help extend the life of your blades.
3. Be sure to clean off all glue of joined boards before planning.
4. This planer is designed for natural wood only. **DO NOT** use any composites, laminates, particle board, plywood, or plastics in the planer.
5. **ALWAYS** plane with the grain of the wood. **NEVER** feed end cut or end grained lumber through the planer.
6. When making multiple passes through the planer on long stock, use the stock return rollers located on top of the machine to move the workpiece over to the infeed side of the table.
7. Wood that has a high moisture content(greater than 20%)or wood exposed to rain or snow will plane poorly and cause excessive wear to the knives, and accelerate rust and corrosion.
8. This manual does not cover every aspect of planning wood. You should research alternative publications for more specific requirements. This type of follow up will help provide with a better understanding of the planning process as well as alert you to several precautions to take that may or may not be listed in this manual.

POWER FEED

The power feed feature two different feed rates,16FPM (feet per minute) and 30FPM. **WHILE THE MACHINE IS RUNNING**, moving the knob one direction produces the 16FPM setting while moving the other direction produces the 30FPM setting. There is also a central position for the knob, which is neutral. **SEE FIG 30.**

Fig. 30

⚠CAUTION

The feed rate should be set **ONLY** while planer is running, and **BEFORE** the workpiece is inserted into the planer. **DO NOT** attempt to change speeds after the cutting operation has started.

DEPTH LIMITER

This planer is equipped with a depth limiter (A),located at the bottom of the cutterhead casting, which controls the maximum depth of cut to 1/8". **SEE FIG 31.** With the limiter installed, you will not be able to cut more than 1/8" in a single pass. While it is possible to plane as much as 1/8" at a time, it is not recommended. Taking more shallow passes will improve the quality of your work as well as extend the life of your planer.

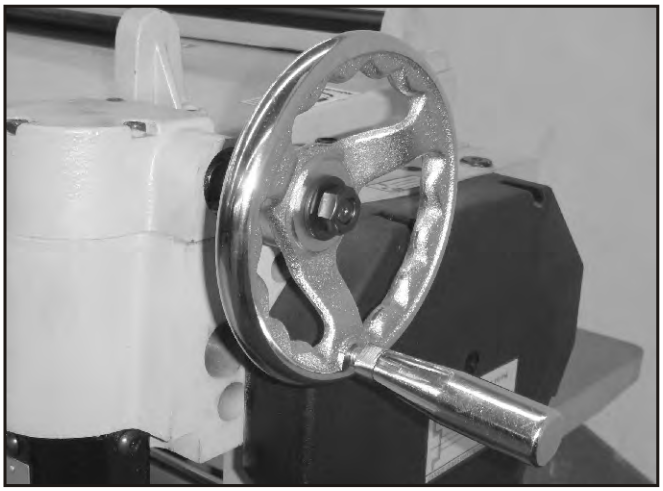
Fig. 31

NOTICE: To avoid mechanical damage to the planer, do not remove the depth limiter.

HANDLE WHEEL

Turning the handwheel clockwise will raise the main table while turning it counterclockwise will lower the table. Crank the handwheel to raise or lower the table according to the desired workpiece thickness. **SEE FIG 32.**

Fig. 32



TRIAL RUN

Once all the assembly is complete and the adjustments are complete, it's time for a test run.

1. Turn on the power supply
2. Press the start button. Keep your hand near the switch, ready to shut the machine down quickly in case anything does not sound right or if there appears to be a problem.
3. The planer should run smoothly with little to no vibration or rubbing noises. If any strange noise is noticed, shut down machine and recheck all adjustments.

⚠WARNING

Do not attempt to make adjustments while the machine is running. Make certain the machine is disconnected from the power source and the machine has come to a complete stop.

⚠WARNING

ALWAYS wear eye protection. Any machine can throw debris into the eyes during operations which could cause severe and permanent eye damage, Everyday eyeglasses are **NOT** safety glasses. **ALWAYS** wear Safety Goggles(that comply with ANSI standard Z87.1)when operating power tools.

MAINTENANCE

GENERAL

Make a habit of inspecting your planer each time you use it. Check the following conditions and repair or replace as necessary.

1. Worn Switch
2. Damaged cords and/or plugs
3. Damaged belts
4. Loose bolts
5. Any other condition that could hamper the safe operation of the machine

TABLE

The table and other non-painted surfaces on the planer should be protected against rust. Be sure to wipe the table clean after every use. This will help prevent moisture from the wood condensing on the bare metal table. It is also a good idea to use a paste wax on the bare metal surfaces. This will help keep moisture from the table and hence help keep it from rusting. Over time, some rust may still develop on the table. To get rid of the rust, use some WD-40 and a fine steel wool.

KNIVES

Make sure that your knives are sharp and properly adjusted before each use. The sharpness and proper setting of the knives is essential to good planing. Refer back to the section on knives in this manual for detailed instructions .

LUBRICATION

BEARINGS

Your planer is equipped with factory sealed bearings requiring no lubrication during its lifetime. If the bearing should fail, the planer will produce a pronounced rumble that will get even louder under load. If it is allowed to get worse, overheating can occur and eventually the bearing can seize up, possibly causing damage to other parts of the machine.

WORM GEAR

The worm gear should be inspected monthly and lubricated with a white lithium grease as needed. Remove the worm gear box to inspect. See parts diagram for location.

CHAIN

The table height adjustment chain should be inspected regularly and lubricated as needed. Lubricate with a general purpose grease.

GEAR BOX

Gear box oil should be drained after the first 20 hours of operation. Replace with 80W-90 gear oil for use in room temperature shops and 50W gear oil for unheated winter shops. Inspect levels periodically and change yearly for occasional use, more frequently with heavy use.

To inspect oil level,

1. Using the short end of a hex wrench, dip the wrench inside the fill hole and rotate so the long end of the wrench is parallel to the table.
2. Remove the wrench. If the end of the hex wrench is coated with oil, then the gearbox level is okay.
3. If the end of the hex wrench is not coated with oil, then you need to add more oil.
4. Remove gear box cover. For information on removing gear box cover, refer to the gear box section in the ADJUSTMENTS section of this manual, page 26.
5. Replace fill plug when finished.

DRIVE CHAIN

The drive chain should be inspected and lubricated monthly using a general purpose grease.

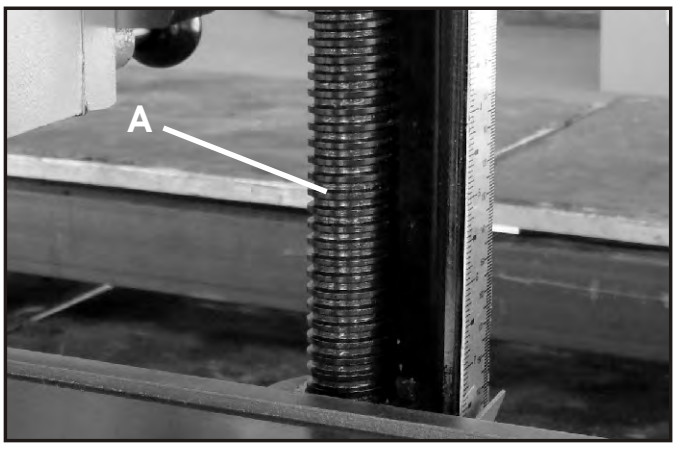
FEED ROLLER

The infeed / outfeed pressure setscrews double as the lubrication ports for the rollers. Add 1-2 drops of light machine oil to all ports before every use. Daily lubrication of feed rollers is **CRUCIAL** to the operation of the planer. Lubricate before start up.

LEAD SCREWS

The four lead screws (A) should be lubricated with general purpose grease at least one a week.
SEE FIG 33.

Fig. 33



TROUBLESHOOTING GUIDE

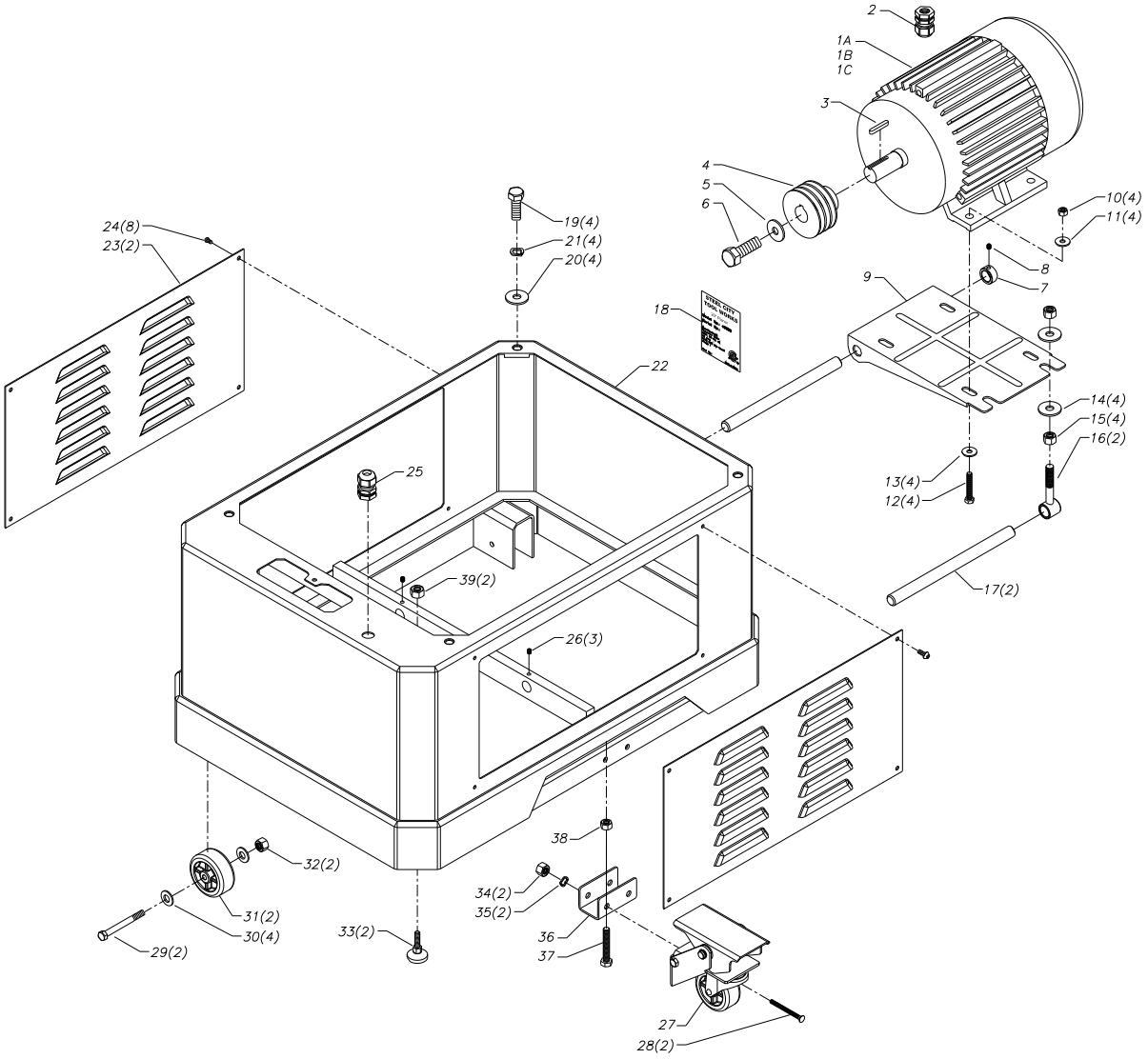
This section covers the most common processing problems encountered in planing and what to do about them. Do not make any adjustments until planer is unplugged and moving parts have come to a complete stop. See the section on Wood Characteristics for additional troubleshooting information.

PROBLEM	LIKELY CAUSE(S)	SOLUTION
Motor will not start.	1. Low voltage. 2. Open circuit in motor or loose connections.	1. Check power line for proper voltage. 2. Inspect all lead connections on motor for loose or open connections.
Motor will not start; fuses or circuit breakers blow.	1. Short circuit in line cord or plug. 2. Short circuit in motor or loose connections. 3. Incorrect fuses or circuit breakers in power line.	1. Inspect cord or plug for damaged insulation and shorted wires. 2. Inspect all connections on motor for loose or shorted terminals or worn insulation. 3. Install correct fuses or circuit breakers.
Motor overheats.	1. Motor overloaded. 2. Air circulation through the motor restricted.	1. Reduce load on motor. 2. Clean out motor to provide normal air circulation.
Motor stalls (resulting in blown fuses or tripped circuit).	1. Short circuit in motor or loose connections. 2. Low voltage. 3. Incorrect fuses or circuit breakers in power line. 4. Motor overloaded.	1. Inspect connections on motor for loose or shorted terminals or worn insulation. 2. Correct the low voltage conditions. 3. Install correct fuses or circuit breakers. 4. Reduce load on motor.
Machine slows when operating.	1. Feed rate too fast. 2. Depth of cut too great.	1. Change speed. 2. Reduce depth of cut.
Loud, repetitious noise coming from machine.	1. Pulley setscrews or keys are missing or loose. 2. Motor fan is hitting the cover. 3. V-belt is defective.	1. Inspect keys and setscrews. Replace or tighten if necessary. 2. Tighten fan or shim cover. 3. Replace V-belt.
Machine is loud when cutting. Overheats or bogs down in the cut.	1. Excessive depth of cut. 2. Knives are dull.	1. Decrease depth of cut. 2. Sharpen knives.
Infeed roller marks are left on the workpiece.	Depth of cut too shallow.	Increase depth of cut.
Outfeed roller marks are left on right side of workpiece.	Too much spring tension on feed roller.	Refer to Feed Roller Pressure section for adjustment.
Cannot control snipe.	Long or heavy board sags as it enters and exits.	Lift up on unsupported end of board as it enters and exits cutterhead.
Machine howls on startup.	Chip deflector too close to the cutterhead.	Move chip deflector back 1/8” to 1/4” from the cutterhead.
Table moves down while cutting.	1. Knives dull. 2. Table locking knobs are loose.	1. Replace knives. 2. Tighten table locking knobs.

4"
1 1/2"
GRAIN
4"
3"
1/4"
1/2"
1/2"
2"
45°

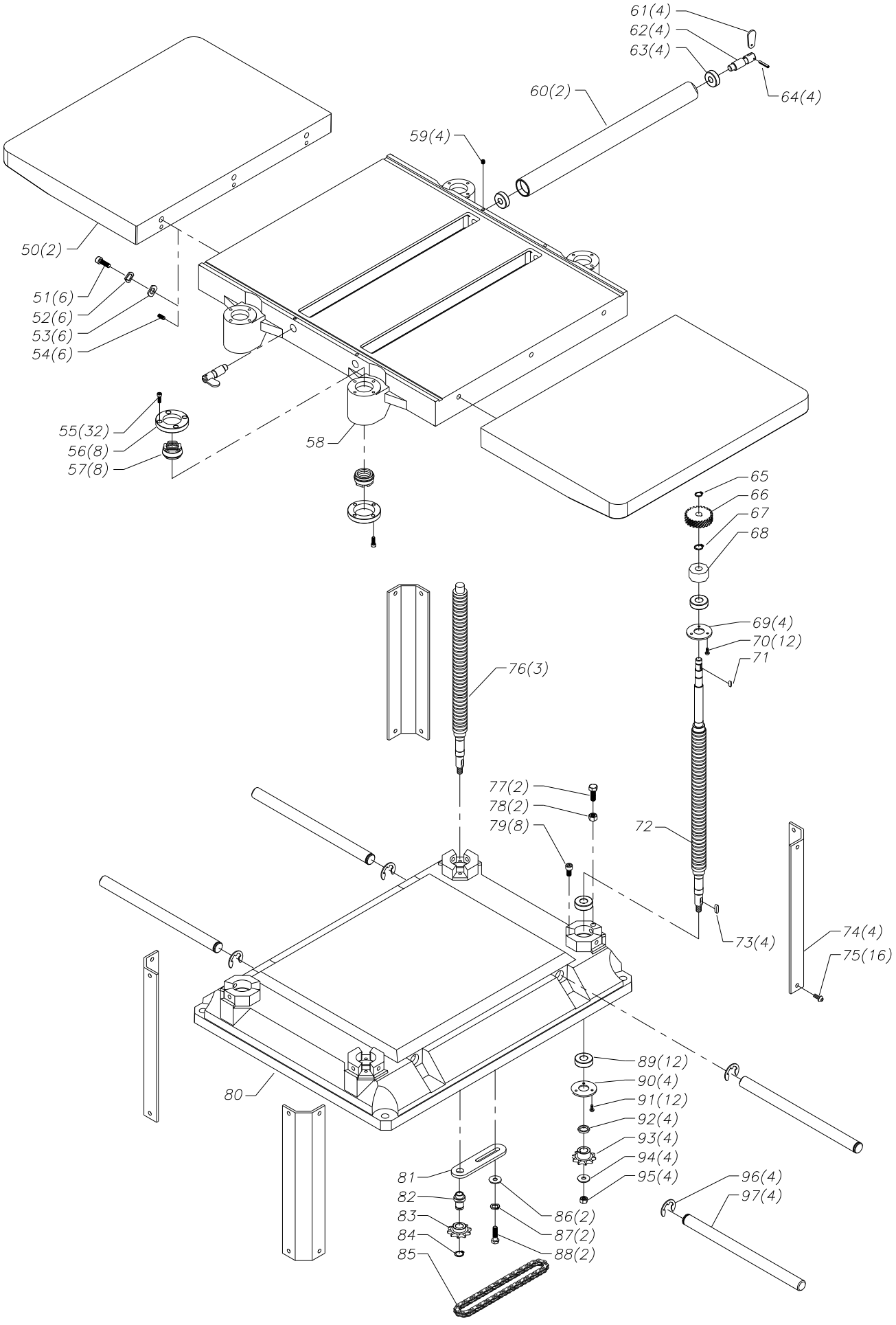
◆ NOTES ◆

PARTS LIST



KEY NO.	PART NO.	DESCRIPTION	QTY
1A	SC10008	MOTOR 5HP, 220-240V,1PH	1
1B	SC72004	CAPACITOR	1
1C	SC72005	CAPACITOR	1
2	SC71003	STRAIN RELIEF M20S	1
3	SC84506	KEY 8 x 7 x 40mm	1
4	SC10009	MOTOR PULLEY	1
5	SC82107	FLAT WASHER Ø8.5 x Ø30 x 3mm	1
6	OR93917	M8 x 20mm HEX HD SCR	1
7	SC10010	SPACER	1
8	SC80435	M6 x 12mm HEX SOC SET SCR	1
9	SC10011	MOTOR MOUNTING PLATE	1
10	OR91501	M8 HEX NUT	4
11	SC82105	FLAT WASHER Ø8.3 x Ø22 x 3mm	4
12	OR94348	M8 x 35mm HEX HD SCR	4
13	SC82105	FLAT WASHER Ø8.3 x Ø22 x 3mm	4
14	OR94007	FLAT WASHER Ø13 x Ø28 x 3mm	4
15	SC81101	M12 x 1.5 HEX NUT	4
16	SC10012	MOTOR ADJUSTMENT SHAFT ASSY	2
17	SC10013	SUPPORT SHAFT	2
18	SC76009	SPEC. LABEL	1

KEY NO.	PART NO.	DESCRIPTION	QTY
19	SC80108	M12 x 40mm HEX HD SCR	4
20	OR94007	FLAT WASHER Ø13 x Ø28 x 3mm	4
21	OR93912	M12 LOCK WASHER	4
22	SC10014	MOTOR BASE	1
23	SC10015	COVER	2
24	OR93930	M6 x 10mm PAN HD SCR	8
25	SC71003	STRAIN RELIEF M20S	1
26	SC80435	M6 x 12mm HEX SOC SET SCR	3
27	SC10016	LOCKING FOOT PEDAL	1
28	SC80701	M8 x 65mm CARRIAGE HD SCR	2
29	SC80102	M8 x 60mm HEX HD SCR	2
30	SC82106	FLAT WASHER Ø8.5 x Ø16 x 2mm	4
31	SC10017	WHEEL	2
32	OR91501	M8 HEX NUT	2
33	SC10018	MACHINERY PAD	2
34	OR91501	M8 HEX NUT	2
35	OR91500	M8 LOCK WASHER	2
36	SC10019	REINFORCEMENT PLATE	1
37	OR94346	M8 x 55mm HEX HD SCR	1
38	OR91501	M8 HEX NUT	1
39	OR90228	M10 HEX NUT	2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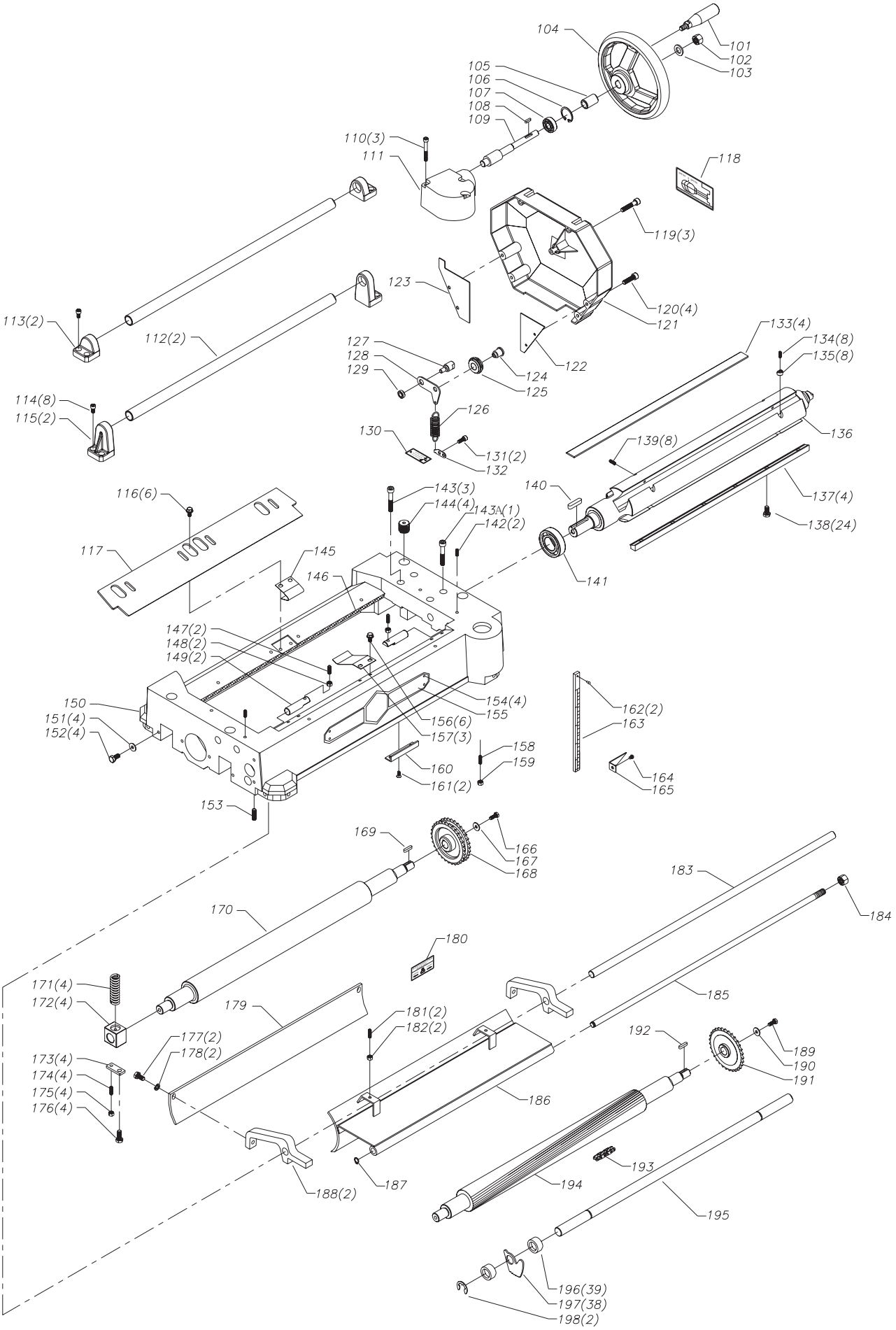
KEY NO.	PART NO.	DESCRIPTION	QTY
50	SC10020	EXTENSION WING	2
51	OR90231	M10 x 30mm HEX SOC HD SCR	6
52	OR90227	M10 LOCK WASHER	6
53	SC82109	FLAT WASHER Ø10.2 x Ø21 x 2mm	6
54	OR91821	M8 x 20mm HEX SOC SET SCR	6
55	OR90877	M5 x 12mm HEX SOC HD SCR	32
56	SC10037	ADJUSTING RING	8
57	SC10026	ELEVATION NUT	8
58	SC10021	BED CASTING	1
59	SC80435	M6 x 12mm HEX SOC SET SCR	4
60	SC10022	BED ROLLER	2
61	SC10039	ADJUSTING PLATE	4
62	SC10023	ECCENTRIC SHAFT	4
63	SC83001	BALL BEARING 6201-2RS	4
64	SC84001	SPRING PIN 3 x 14mm	4
65	OR90132	RETAINING RING STW-12	1
66	SC10024	WORM	1
67	SC85101	RETAINING RING STW-14	1
68	SC10025	BUSHING	1
69	SC10038	BEARING RETAINER	4
70	OR93372	M6 x 12mm HEX SOC HD SCR	12
71	SC84501	KEY 4 x 4 x 12mm	1
72	SC10027	SCREW POST	1
73	SC84504	KEY 5 x 5 x 16mm	4

KEY NO.	PART NO.	DESCRIPTION	QTY
74	SC10036	COLUMN SUPPORT	4
75	SC80403	M8 x 16mm PAN HD SCR	16
76	SC10028	SCREW POST	3
77	OR92191	M6 x 25mm HEX HD SCR	2
78	OR90235	M6 HEX NUT	2
79	OR93372	M6 x 12mm HEX SOC HD SCR	8
80	SC10029	BASE	1
81	SC10031	CHAIN TENSIONER BRACKET	1
82	SC10032	SPROCKET SHAFT	1
83	SC10033	SPROCKET 10T	1
84	SC85102	RETAINING RING STW-15	1
85	SC10030	CHAIN #40-166	1
86	SC82105	FLAT WASHER Ø8.3 x Ø22 x 3mm	2
87	OR91500	M8 LOCK WASHER	2
88	OR93917	M8 x 20mm HEX HD SCR	2
89	OR95007	BALL BEARING 6003ZZ	12
90	SC10038	BEARING RETAINER	4
91	OR93372	M6 x 12mm HEX SOC HD SCR	12
92	SC10040	SPACER	4
93	SC10034	SPROCKET	4
94	SC82108	FLAT WASHER Ø10.2 x Ø20 x 2mm	4
95	SC81201	M10 LOCK NUT (8.3B)	4
96	SC85302	E-RING ETW-19	4
97	SC10035	SHAFT	4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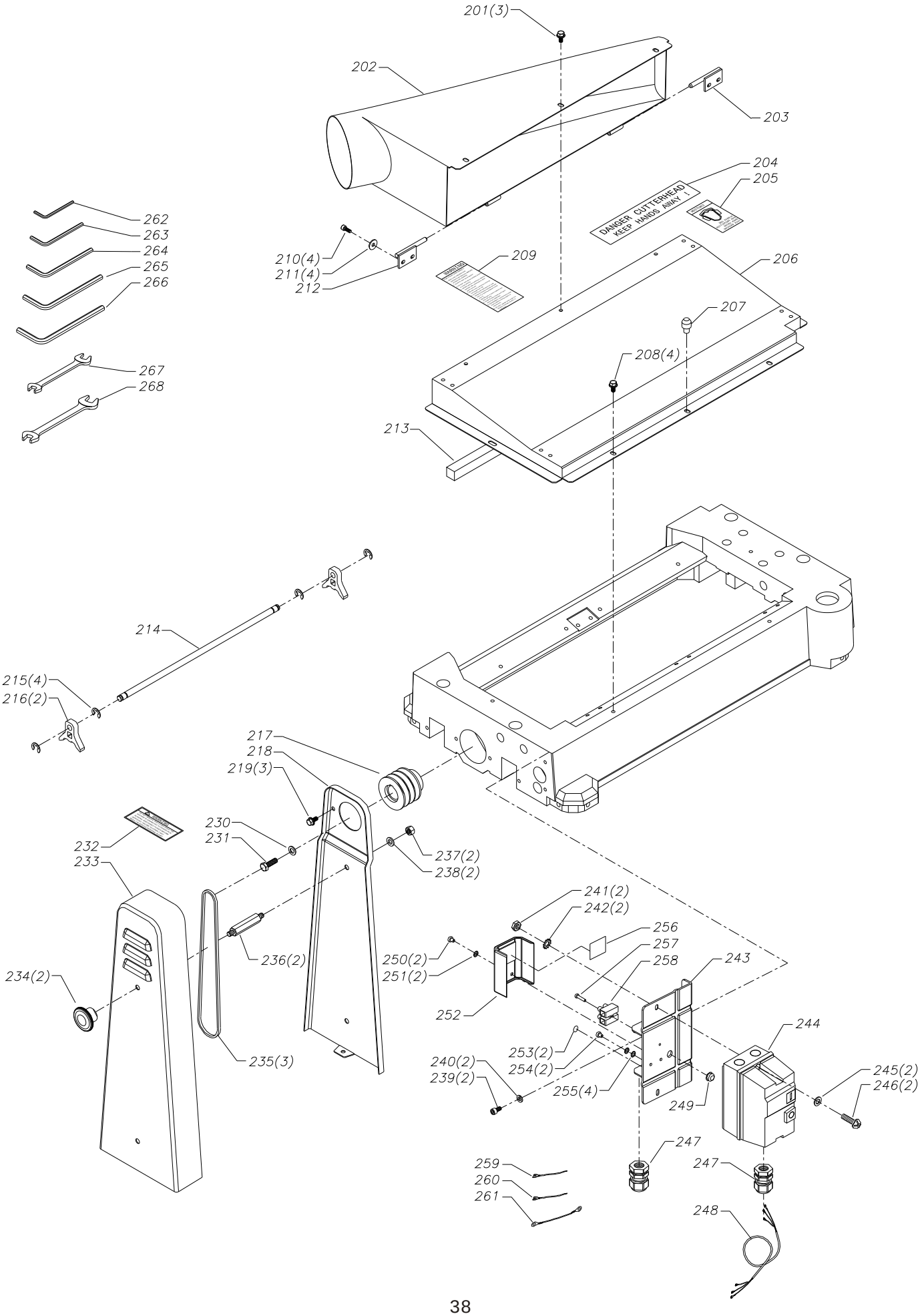
KEY NO.	PART NO.	DESCRIPTION	QTY
101	SC10043	HANDLE	1
102	OR94176	M12 HEX NUT	1
103	OR94007	FLAT WASHER Ø13 x Ø28 x 3mm	1
104	SC10044	HANDLE WHEEL	1
105	SC10045	SPACER	1
106	SC85103	RETAINING RING RTW-32	1
107	SC83001	BALL BEARING 6201-2RS	1
108	SC84502	KEY 4 x 4 x 16mm	1
109	SC10046	ELEVATING WORM SHAFT	1
110	SC80202	M6 x 55mm HEX SOC HD SCR	3
111	SC10047	WHEEL BRACKET	1
112	SC10042	ROLLER	2
113	SC10089	REAR ROLLER BRACKET	2
114	OR93899	M6 x 16mm HEX SOC HD SCR	8
115	SC10041	FRONT ROLLER BRACKET	2
116	OR94029	M6 x 12mm HEX HEAD SERRATED SCR	6
117	SC10057	CHIP DEFLECTOR	1
118	OR71001	GEAR BOX OPERATION LABEL	1
119	OR90847	M5 x 25mm HEX SOC HD SCR	3
120	OR94374	M5 x 10mm HEX SOC HD SCR	4
121	SC10048	SIDE COVER	1
122	SC10066	SIDE COVER GUARD	1
123	SC10049	SIDE COVER GUARD	1
124	SC10050	CHAIN TENSIONER SHAFT	1
125	SC10051	CHAIN TENSIONER	1
126	SC10055	SPRING	1
127	SC10052	SHAFT	1
128	SC10053	BRACKET	1
129	SC10054	WASHER	1
130	SC76008	OIL LEVEL LABEL	1
131	OR93372	M6 x 12mm HEX SOC HD SCR	2
132	SC10056	SPRING HOOK PLATE	1
133	SC10070	KNIFE	4
134	OR93945	M5 x 16mm HEX SOC SET SCR	8
135	SC10072	ADJUST SCREW	8
136	SC10071	CUTTERHEAD	1
137	SC10074	KNIFE LOCKING BAR	4
138	SC10075	HEX SCREW	24
139	SC10073	SPRING	8
140	SC84506	KEY 8 x 7 x 40mm	1
141	SC83003	BALL BEARING 6206-2RS	1
142	OR93951	M6 x 16mm HEX SOC SET SCR	2
143	OR90249	M8 x 50mm HEX SOC HD SCR	3
143A	SC80441	M8x50mm HEX SOC HD SCR w/THRO HOLE	1
144	SC10058	SCREW	4
145	SC10064	SPRING PLATE	1
146	SC10063	CHIP GASKET	1
147	OR94280	M6 x 20mm HEX SOC SET SCR	2
148	OR90235	M6 HEX NUT	2
149	SC10062	ADJUSTING SHAFT	2

KEY NO.	PART NO.	DESCRIPTION	QTY
150	SC10065	CUTTER HEAD CASTING	1
151	SC82104	FLAT WASHER Ø6.2 x Ø24 x 3mm	4
152	OR90333	M6 x 12mm HEX HD SCR	4
153	SC80601	M8 x 16mm HEX SOC SET SCR	1
154	SC84301	RIVET Ø2 x 8mm	4
155	OR70484	NAME PLATE	1
156	OR94029	M6 x 12mm HEX HEAD SERRATED SCR	6
157	SC10060	SPRING PLATE	3
158	OR93951	M6 x 16mm HEX SOC SET SCR	1
159	OR90235	M6 HEX NUT	1
160	SC10061	LIMIT PLATE	1
161	OR90867	M5 x 10mm PAN HD SCR	2
162	SC84301	RIVET Ø2 x 8mm	2
163	OR71847	SCALE	1
164	OR90867	M5 x 10mm PAN HD SCR	1
165	SC10059	POINTER	1
166	OR94038	M6 x 16mm HEX HD SCR	1
167	SC82104	FLAT WASHER Ø6.2 x Ø24 x 3mm	1
168	SC10076	OUTFEED ROLLER SPROCKET	1
169	SC84505	KEY 5 x 5 x 20mm	1
170	SC10077	OUTFEED ROLLER	1
171	SC10078	SPRING	4
172	SC10079	BUSHING	4
173	SC10080	RETAINER PLATE	4
174	OR93951	M6 x 16mm HEX SOC SET SCR	4
175	OR90235	M6 HEX NUT	4
176	OR93918	M8 x 16mm HEX HD SCR	4
177	OR93917	M8 x 20mm HEX HD SCR	2
178	OR91500	M8 LOCK WASHER	2
179	SC10084	PRESSURE BAR	1
180	SC76002	BLADE ADJUST LABEL	1
181	OR94280	M6 x 20mm HEX SOC SET SCR	2
182	OR90235	M6 HEX NUT	2
183	SC10081	SUPPORT SHAFT	1
184	OR94176	M12 HEX NUT	1
185	SC10082	CHIP BREAKER SHAFT	1
186	SC10085	CHIP BREAKER	1
187	OR90132	RETAINING RING STW-12	1
188	SC10083	PRESSURE BAR MOUNT	2
189	OR94038	M6 x 16mm HEX HD SCR	1
190	SC82104	FLAT WASHER Ø6.2 x Ø24 x 3mm	1
191	SC10086	INFEED ROLLER SPROCKET	1
192	SC84505	KEY 5 x 5 x 20mm	1
193	SC10087	CHAIN 06B-67	1
194	SC10088	INFEED ROLLER	1
195	SC10069	ANTI-KICKBACK SHAFT	1
196	SC10067	SPACER	39
197	SC10068	ANTI-KICKBACK FINGER	38
198	SC85301	E-RING ETW-15	2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DANGER CUTTERHEAD
KEEP HANDS AWAY !
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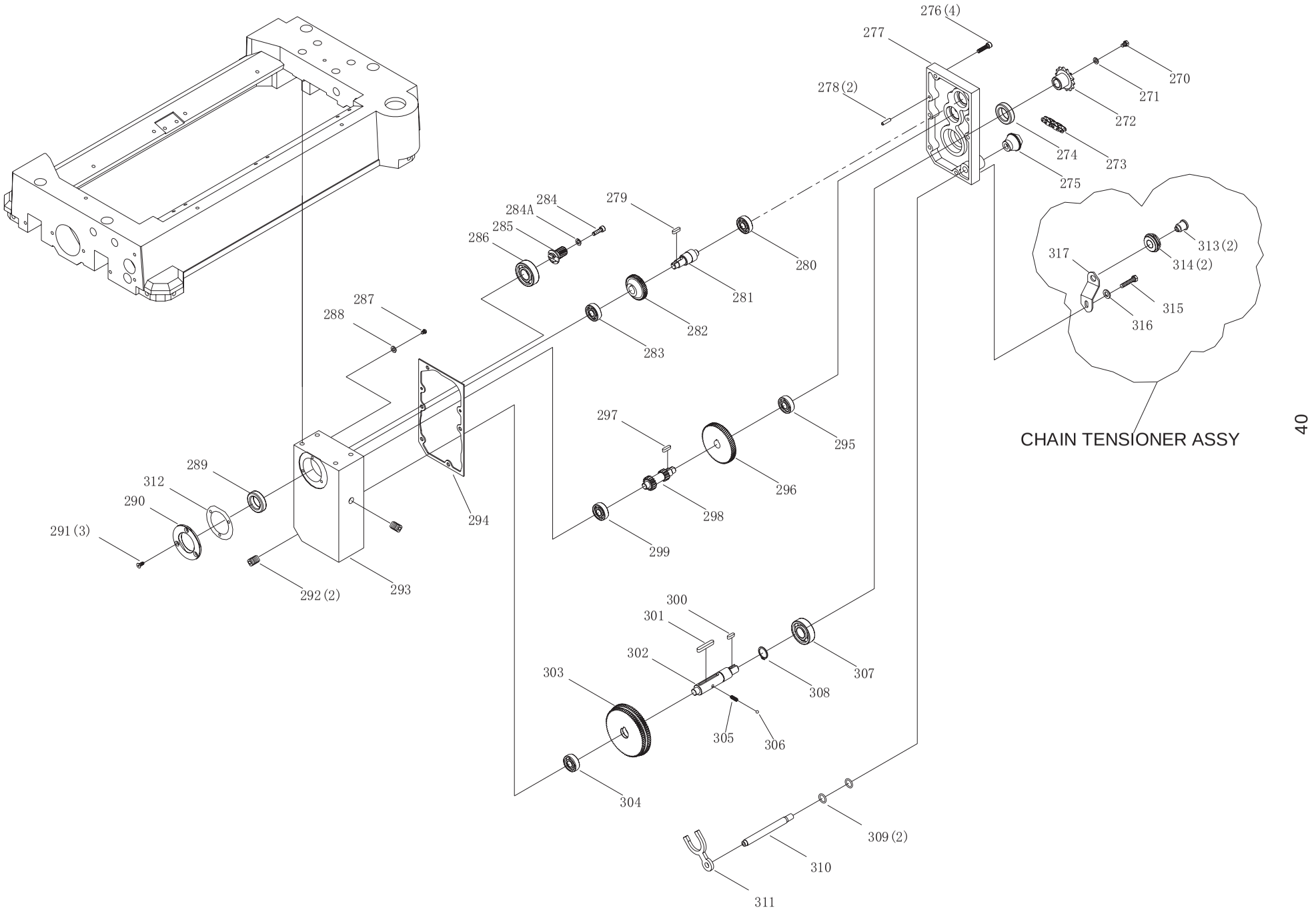
KEY NO.	PART NO.	DESCRIPTION	QTY
201	OR94029	M6 x 12mm HEX HEAD SERRATED SCR	3
202	SC10090	DUST CHUTE	1
203	SC10103	HINGE BRACKET LEFT	1
204	SC76004	DANGER LABEL	1
205	SC76003	GLASSES/RESPIRATOR LABEL	1
206	SC10091	DUST HOOD	1
207	OR72722	PLUNGER	1
208	SC10092	KNOB M6 x 26	4
209	SC76005	WARNING LABEL	1
210	OR90877	M5 x 12mm HEX SOC HD SCR	4
211	SC82102	FLAT WASHER Ø5.2 x Ø12 x 2mm	4
212	SC10104	HINGE BRACKET RIGHT	1
213	SC10093	CHIP GASKET	1
214	SC10101	KNIFE SETTING GAGE SHAFT	1
215	OR94216	E-RING ETW-9	4
216	SC10102	KNIFE SETTING GAGE	2
217	SC10094	CUTTERHEAD PULLEY	1
218	SC10095	BELT GUARD REAR	1
219	OR94029	M6 x 12mm HEX HEAD SERRATED SCR	3
230	SC82107	FLAT WASHER Ø8.5 x Ø30 x 3mm	1
231	OR92735	M8 x 25mm HEX HD SCR	1
232	SC76006	WARNING LABEL	1
233	SC10097	BELT GUARD REAR	1
234	SC10098	KNOB	2
235	SC73001	BELT M56	3
236	SC10096	BELT GUARD MOUNT	2
237	OR91501	M8 HEX NUT	2
238	SC82105	FLAT WASHER Ø8.3 x Ø22 x 3mm	2
239	OR93899	M6 x 16mm HEX SOC HD SCR	2
240	OR90509	M6 LOCK WASHER	2
241	OR90799	M5 HEX NUT	2
242	OR90362	M5 EXT TOOTH WASHER	2
243	SC10100	SWITCH MOUNT	1
244	SC10099	POWER SWITCH	1
245	SC82101	FLAT WASHER Ø5.1 x Ø10 x 1mm	2
246	OR93814	M5 x 20mm PAN HD SCR	2
247	SC71003	STRAIN RELIEF M20S	2
248	SC72003	MOTOR CORD	1
249	SC10219	GROMMET	1
250	OR94841	M5 x 6mm PAN HEAD SCREW	2
251	OR90362	M5 EXT TOOTH WASHER	2
252	SC10220	JUNCTION BOX COVER	1
253	SC76017	GROUNDING LABEL	2
254	OR94841	M5 x 6mm PAN HEAD SCREW	2
255	OR90362	M5 EXT TOOTH WASHER	4
256	SC76018	WIRING DIAGRAM	1
257	OR90264	M4 x 18mm PAN HEAD SCREW	1
258	SC71004	TERMINAL BLOCK PA16	1
259	SC72002	WHITE LEAD WIRE	1
260	SC72006	BLACK LEAD WIRE	1
261	SC72007	GROUNDING WIRE	1
262	OR90808	HEX WRENCH 2.5mm	1
263	OR90804	HEX WRENCH 3mm	1
264	OR90805	HEX WRENCH 4mm	1
265	OR93547	HEX WRENCH 5mm	1
266	OR92172	HEX WRENCH 6mm	1
267	OR90908	OPEN END WRENCH 8mm x 10mm	1
268	OR93975	OPEN END WRENCH 12mm x 14mm	1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CHAIN TENSIONER ASSY
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KEY NO.	PART NO.	DESCRIPTION	QTY
*	SC10105	GEAR BOX ASSY CONST. OF:	1
270	OR93918	M8 x 16mm HEX HD SCR	1
271	SC82105	FLAT WASHER Ø8.3 x Ø22 x 3mm	1
272	SC10106	SPROCKET 14T	1
273	SC10107	CHAIN 06B-51	1
274	SC10124	OIL SEAL FB 20x35x7	1
275	SC10108	KNOB	1
276	OR93936	M6 x 25mm HEX SOC HD SCR	4
277	SC10112	GEARBOX COVER	1
278	SC84002	PIN Ø5 x 10mm	2
279	SC84503	KEY 5 x 5 x 14mm	1
280	SC83001	BALL BEARING 6201-2RS	1
281	SC10113	SHAFT	1
282	SC10114	GEAR	1
283	SC83001	BALL BEARING 6201-2RS	1
284	OR93955	M5 x 16mm HEX SOC HD SCR	1
284A	OR90145	M5 LOCK WASHER	1
285	SC10115	GEAR	1
286	SC83002	BALL BEARING 6204-2RS	1
287	SC80404	M6x10mm PAN HD SCR	1
288	SC82103	FLAT WASHER Ø6.2xØ16x1mm	1
289	SC10116	OIL SEAL FB 25x40x10	1
290	SC10127	GEAR BOX COVER	1
291	OR90867	M5 x 10mm PAN HD SCR	3
292	SC10117	PLUG PT 1/4"	2

KEY NO.	PART NO.	DESCRIPTION	QTY
293	SC10118	GEAR BOX	1
294	SC10119	GEARBOX GASKET	1
295	SC83001	BALL BEARING 6201-2RS	1
296	SC10125	GEAR	1
297	OR94061	KEY 5 x 5 x 10mm	1
298	SC10126	SHAFT	1
299	SC83001	BALL BEARING 6201-2RS	1
300	SC84505	KEY 5x5x20mm	1
301	OR93883	KEY 5 x 5 x 50mm	1
302	SC10121	SHAFT	1
303	SC10120	GEAR ASSEMBLY	1
304	SC83001	BALL BEARING 6201-2RS	1
305	SC10122	SPRING Ø0,5XØ4,5X21MM	1
306	SC10123	STEEL BALL Ø5	1
307	SC83002	BALL BEARING 6204-2RS	1
308	OR94227	RETAINING RING STW-20	1
309	SC10109	O-RING P9	2
310	SC10110	SHAFT	1
311	SC10111	SHIFTING CLAW	1
312	SC10462	GASKET	1
*	SC10461	CHAIN TENSIONER ASSY (#313-317)	
313	SC10050	CHAIN TENSIONER SHAFT	1
314	SC10051	CHAIN TENSIONER	1
315	SC80433	M6*P1.0*25MMHEX HEAD SCREW	1
316	SC82118	FLAT WASHER Ø6.2×Ø16×1mm	1
317	SC10459	BRACKET	1

◆ NOTES ◆

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2 *Year Warranty*